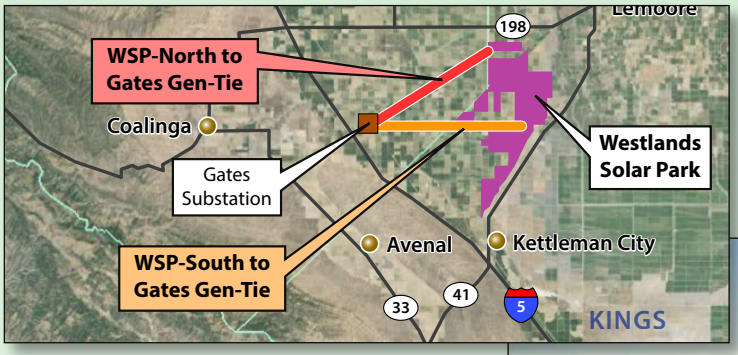
Draft

Program Environmental Impact Report

Westlands Solar Park Master Plan and Gen-Tie Corridors Plan

State Clearinghouse No. 2013031043



Westlands Water District

October 2017

Volume I of II

EIR Text and Appendices A and B

WESTLANDS WATER DISTRICT

NOTICE OF AVAILABILITY

OF THE

WESTLANDS SOLAR PARK MASTER PLAN AND WSP GEN-TIE CORRIDORS PLAN DRAFT PROGRAM ENVIRONMENTAL IMPACT REPORT

State Clearinghouse #2013031043

NOTICE IS HEREBY GIVEN that Westlands Water District (WWD), as Lead Agency, has completed a Draft Program Environmental Impact Report (Draft PEIR) for the Westlands Solar Park (WSP) Master Plan and WSP Gen-Tie Corridors Plan (proposed project).

PROJECT LOCATION and SITE DESCRIPTION: The overall project covered by this PEIR includes two main elements, consisting of: 1) the Westlands Solar Park ("WSP") Master Plan, which is an overall plan of development for solar generating facilities within the WSP plan area; and 2) the WSP Gen-Tie Corridors Plan. The project location and site description are provided below.

Westlands Solar Park Master Plan. The approximately 21,000-acre Westlands Solar Park is located in west-central Kings County and is generally bounded by State Route 198 on the north, State Route 41 on the southeast, and the Fresno County line on the west. The WSP plan area consists almost entirely of agricultural land. There are no dwellings or agricultural buildings within the plan area. County roads that traverse the plan area include Avenal Cutoff Road, Laurel Avenue, and Nevada Avenue.

WSP Gen-Tie Corridors Plan. This plan includes two gen-tie corridors, as described below.

WSP-South to Gates Gen-Tie Corridor – This 350-foot wide corridor runs parallel and adjacent to the north side of Nevada Avenue (Kings County) and Jayne Avenue (Fresno County), for a distance of approximately 11.5 miles from the WSP plan area to the Gates Substation. The corridor consists almost entirely of agricultural land.

WSP-North to Gates Gen-Tie Corridor – This 350-foot wide corridor runs parallel and adjacent to the existing 230-kV Henrietta-Gates transmission line, for a distance of approximately 11.5 miles from the northern portion of the WSP plan area to the Gates Substation. The corridor consists almost entirely of agricultural land.

PROJECT DESCRIPTION: The two main project elements are described as follows:

Westlands Solar Park Master Plan. The WSP Master Plan is intended to serve as the planning framework for a series of utility-scale solar photovoltaic (PV) energy generating facilities, consisting of individual solar projects of up to 250 MW, with a total combined generating capacity of approximately 2,000 MW, although the final power output could

increase with improved solar PV module efficiency over the course of the WSP buildout period. The installation of solar generating facilities is planned to occur incrementally over an approximately 12-year buildout period extending to about 2030.

WSP Gen-Tie Corridors Plan. The two planned gen-tie corridors are described below.

WSP-South to Gates Gen-Tie Corridor – This planned 230-kV gen-tie corridor would serve as the first of two WSP gen-ties providing delivery of solar power from the WSP to the Gates Substation. The corridor would commence near the intersection of Nevada Avenue and the 25th Avenue alignment and run westward for 11.5 miles to the Gates Substation.

WSP-North to Gates Gen-Tie Corridor – This second planned 230-kV gen-tie corridor would commence at a planned substation in the northern portion of WSP, and run southwestward for 11.5 miles to the Gates Substation.

HAZARDOUS WASTE SITES: The proposed project is not located on any hazardous waste sites lists enumerated under Section 65962.5 of the Government Code.

SIGNIFICANT ANTICIPATED ENVIRONMENTAL EFFECTS: The Draft PEIR identifies significant impacts under the following California Environmental Quality Act (CEQA) environmental issue areas: agricultural resources; air quality; biological resources; cultural resources and tribal cultural resources; geology and soils; hazards and hazardous materials; hydrology and water quality; land use and planning; paleontological resources; and transportation/traffic. All of the aforementioned impacts could be mitigated to less-than-significant levels through implementation of mitigation measures identified in the Draft PEIR.

DOCUMENT AVAILABILITY: The Draft PEIR is available for review at the following locations:

- Westlands Water District Main Office, 3130 N. Fresno Street, Fresno, CA.
- Westlands Water District Field Office, 23050 W. Mt. Whitney Avenue, Five Points, CA.
- Hanford Branch of the Kings County Library, 401 N. Douty Street, Hanford, CA.
- Lemoore Branch of the Kings County Library, 457 C Street, Lemoore, CA.

An electronic version can be downloaded from the WWD website: http://wwd.ca.gov/news-and-reports/environmental-docs/

PUBLIC REVIEW TIMELINE: The 45-day public review period for the Draft PEIR begins **October 17, 2017** and ends **November 30, 2017**. Comments on the Draft PEIR must be received by WWD no later than **5:00 PM on November 30, 2017** in order to be addressed in the Final PEIR. Written comments may be submitted by mail or email to the attention of Kiti Buelna-Campbell, Senior Resources Engineer, at the following:

Westlands Water District
3130 N. Fresno Street, P.O. Box 6056
Fresno, CA 93703-6056

Email: kcampbell@westlandswater.org

This page intentionally left blank

DRAFT

PROGRAM ENVIRONMENTAL IMPACT REPORT

WESTLANDS SOLAR PARK MASTER PLAN AND WSP GEN-TIE CORRIDORS PLAN

STATE CLEARINGHOUSE NO. 2013031043

Prepared for

WESTLANDS WATER DISTRICT

P.O. BOX 6056
3130 N. FRESNO STREET
FRESNO, CALIFORNIA 93703-6056

Prepared by

BERT VERRIPS, AICP
ENVIRONMENTAL CONSULTING
SANTA ANA, CALIFORNIA

OCTOBER 2017

This page intentionally left blank

TABLE OF CONTENTS – 1

VOLUME I – EIR TEXT

TABLE OF CONTENTS – 2

VOLUME I – EIR TEXT (Cont'd)

APPENDICES

VOLUME II – EIR TECHNICAL APPENDICES C THROUGH G

APPENDICES

LIST OF TABLES – 1

LIST OF TABLES – 2

LIST OF FIGURES

This page intentionally left blank

ACRONYMS AND ABBREVIATIONS

AC	alternating current
ADT	Average Daily Traffic
AF or af	acre-feet
AFY or afy	acre-feet per year
BMPs	best management practices
CAL EPA	California Environmental Protection Agency
CAL FIRE	California Department of Forestry and Fire Protection
Cal-ISO	California Independent System Operator (also CAISO)
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CBC	California Building Code
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CDOC	California Department of Conservation
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CNDDB	California Natural Diversity Data Base
CNEL	community noise equivalent level
CO_2e	Carbon Dioxide Equivalents
CPUC	California Public Utilities Commission
CUPA	Certified Uniform Program Agency
CWA	Clean Water Act
dB	decibels
dBA	decibels in “A-weighted” scale
DC	direct current
DOE	U.S. Department of Energy
DPR	California Department of Pesticide Regulation
DTSC	California Department of Toxic Substances Control
DWR	California Department of Water Resources
EMF	Electric and Magnetic Fields
ESA	Endangered Species Act
FMMP	Farmland Mapping and Monitoring Program
g	gravity - unit of ground acceleration; 1.0 g = force of gravity
gen-tie	generation-interconnection tie line
GHG	greenhouse gas
gpd	gallons per day
gpm	gallons per minute
GWP	global warming potential
HCP	Habitat Conservation Plan
HMBP	Hazardous Materials Business Plan
HMMP	Hazardous Materials Management Plan
ISR	Indirect Source Review
kV	kilovolt (unit of electrical potential)
kW	kilowatt

ACRONYMS AND ABBREVIATIONS (Cont'd)

L_{dn}	day-night average noise level
L_{eq}	equivalent hourly average noise level
L_{max}	maximum instantaneous noise level
LOS	Level of Service
MBTA	Migratory Bird Treaty Act
mG	Milligauss (unit of magnetic field strength)
mg/L	milligram per liter
MM	Mitigation Measure
MW	Megawatt
msl	mean sea level
NEPA	National Environmental Policy Act
NPDES	National Pollutant Discharge Elimination System
NOA	Notice of Availability
NOP	Notice of Preparation
O&M	operations and maintenance
OSHA	Occupational Safety and Health Administration
PDFs	Project Design Features
PG&E	Pacific Gas and Electric Company
Plan Area	Westlands Solar Park Master Plan Area
PPA	Power Purchase Agreement
ppm	parts per million by volume
PRC	California Public Resources Code
PV	photovoltaic
ROW	right-of-way
RPS	Renewables Portfolio Standard
RWQCB	Regional Water Quality Control Board
SCE	Southern California Edison
SHPO	State Historic Preservation Office
SJVAPCD	San Joaquin Valley Air Pollution Control District
SoCalGas	Southern California Gas Company
SR	State Route
SSC	species of special concern
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
USACE	U.S. Army Corps of Engineers
USBOR	U.S. Bureau of Reclamation
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	underground storage tank
V/C	volume to capacity ratio
VdB	vibration velocity level in decibels
VMT	vehicle miles traveled
WAPA	Western Area Power Administration (Western)
WSA	Water Supply Assessment
WSP	Westlands Solar Park
WWD	Westlands Water District

ES. EXECUTIVE SUMMARY

ES.1. INTRODUCTION

Purpose of This EIR

This Environmental Impact Report (EIR) assesses the potential environmental effects of the adoption and long-term implementation of the Westlands Solar Park (WSP) Master Plan and WSP Gen-Tie Corridors Plan. This EIR has been prepared by a consultant on behalf of the Westlands Water District (WWD) as Lead Agency in conformance with the California Environmental Quality Act (CEQA) of 1970, as amended, to inform public decision-makers and the public of the significant environmental impacts of the projects and plans that they propose to consider.

The following sections from the CEQA Guidelines define the role and purpose of an EIR:

> **§15121(a) Informational Document.** An EIR is an informational document which will inform public agency decision-makers and the public generally of the significant environmental effect of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project. The public agency shall consider the information in the EIR along with other information which may be presented to the agency.
>
> **§15151 Standards of Adequacy of an EIR.** An EIR should be prepared with a sufficient degree of analysis to provide decision-makers with information which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is reviewed in light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among experts. The courts have not looked for perfection but for adequacy, completeness, and a good faith effort at full disclosure.

Type of Environmental Document – Program EIR

This EIR is a "Program EIR" as provided for in Section 15168 of the CEQA Guidelines. Program EIRs are intended to provide plan-level or programmatic environmental review, as distinguished from project-level environmental review conducted for discretionary approvals of projects proposed for construction. According to the Guidelines, a Program EIR may be prepared on a series of actions that can be characterized as one large project, are related geographically, and as logical parts in a chain of contemplated actions. The Program EIR (or PEIR) allows for a more exhaustive consideration of effects and alternatives than would be practical an EIR on separate individual actions, and ensures consideration of cumulative impacts that might be missed on a case-by-case basis.

ES.2. PROJECT DESCRIPTION

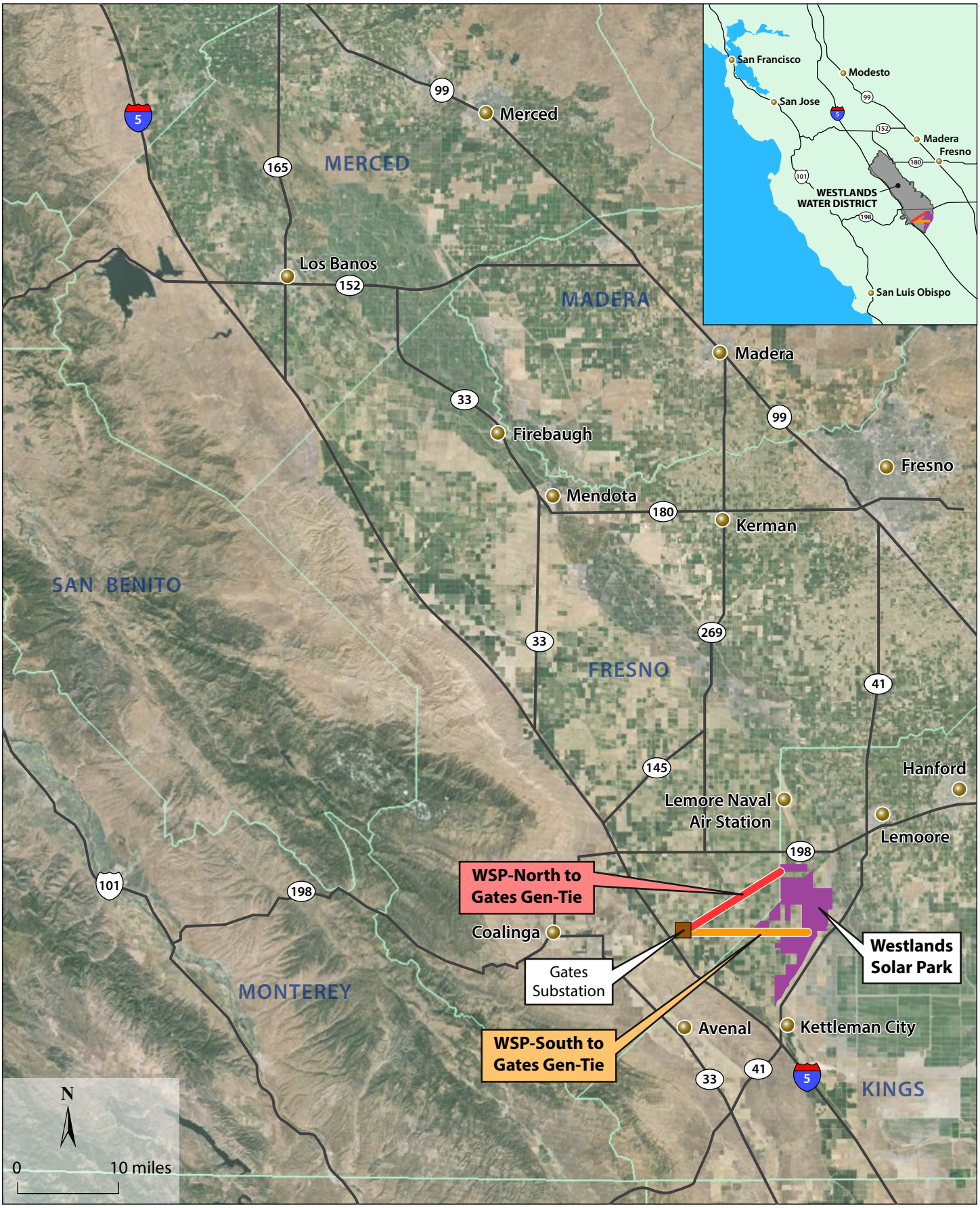
The overall project covered by this EIR includes two main elements, consisting of: 1) the Westlands Solar Park ("WSP") Master Plan, which is an overall plan of development for solar generating facilities within WSP; and 2) the Westlands Solar Park Generation-Interconnection Tie-Line Corridors Plan ("WSP Gen-Tie Corridors Plan"), which is the route plan for high-voltage generation-transmission corridors to provide interconnection and capacity for delivery of WSP-generated power to the State electrical grid at the Gates Substation(see Figures ES-1 and ES-2). The main elements of the plan are briefly described below.

1) Westlands Solar Park (WSP) Master Plan – The WSP Master Plan is intended to serve as the planning framework for a series of utility-scale solar photovoltaic (PV) energy generating facilities on about 21,000 acres in west-central Kings County, generally located south of SR-198, west of SR-41 and the Kings River, and east of the Fresno County Line (see Figure ES-3). The combined generating capacity of WSP solar projects is estimated to be 2,000 MW, although the final power output could increase with improved solar PV module efficiency over the course of the WSP buildout period. The solar PV projects developed within WSP would have varying generating capacities, with the power output from individual solar facilities ranging up to about 250 MW. The installation of solar generating facilities is planned to occur incrementally over an approximately 12-year buildout period extending to about 2030. For planning purposes, the Master Plan area is divided into 12 subareas (or solar generating facilities – SGFs), and includes several substations to step up the generated power to a transmission voltage of 230-kV.

2) Westlands Solar Park to Gates Substation Gen-Tie Corridors – Two gen-tie lines are planned to deliver WSP solar-generated power to the electrical grid, as described here (see Figure ES-4):

    a. WSP-South to Gates Gen-Tie Corridor – This planned 230-kV transmission corridor would run parallel and adjacent to the Nevada-Jayne Avenue roadway right-of-way, commencing at a planned substation on Nevada Avenue in the southern portion of WSP and running westward along the north side of the roadway for 11.5 miles to the Gates Substation. This gen-tie corridor would serve as the first of two WSP gen-ties providing delivery of solar power generated in the central and southern portions of the WSP to the Gates Substation where it would be transferred to the State electrical grid. [An optional configuration under consideration would consist of two parallel 230-kV gen-ties in this alignment, as an alternative to the second gen-tie corridor described below.]

    b. WSP-North to Gates Gen-Tie Corridor – This planned 230-kV transmission corridor would run parallel and adjacent to the existing 230-kV Henrietta-Gates transmission line, commencing at a planned substation in the northern portion of WSP, and running southwestward for 11.5 miles to the Gates Substation. This transmission corridor would serve as the second WSP gen-tie line providing delivery of solar power generated in the northern and central portions of the WSP to the Gates Substation where it would be transferred to the State electrical grid. [As mentioned above, this gen-tie alignment may not be pursued if it is ultimately decided to add a second parallel gen-tie line along the Nevada-Jayne Avenue alignment described above. Alternatively, it is possible that this corridor may include two parallel 230-kV gen-tie lines, in which case the southern gen-tie described above may not be constructed.]

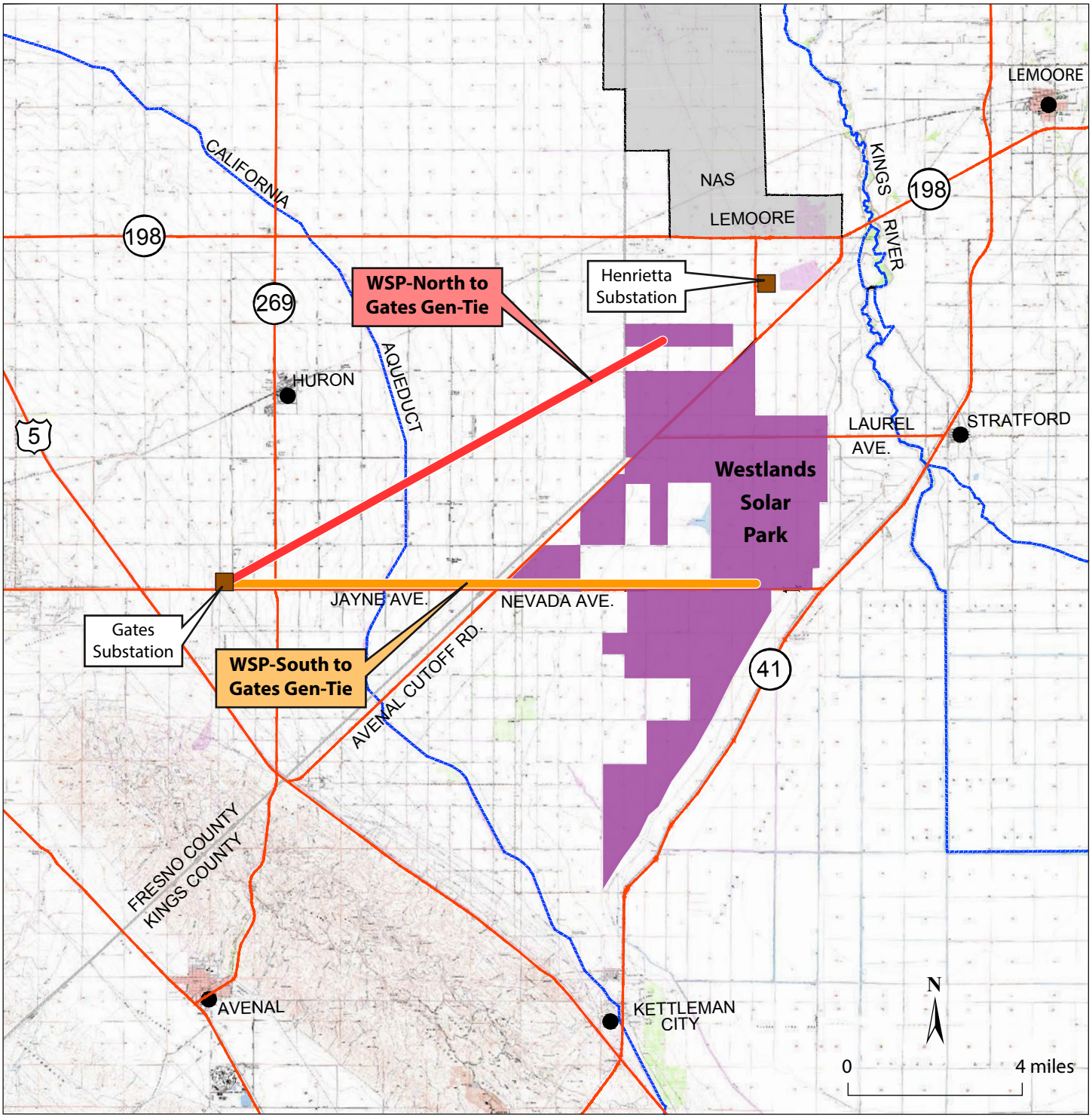


Base map: Google Earth, 2016

Regional Location

Figure ES-1

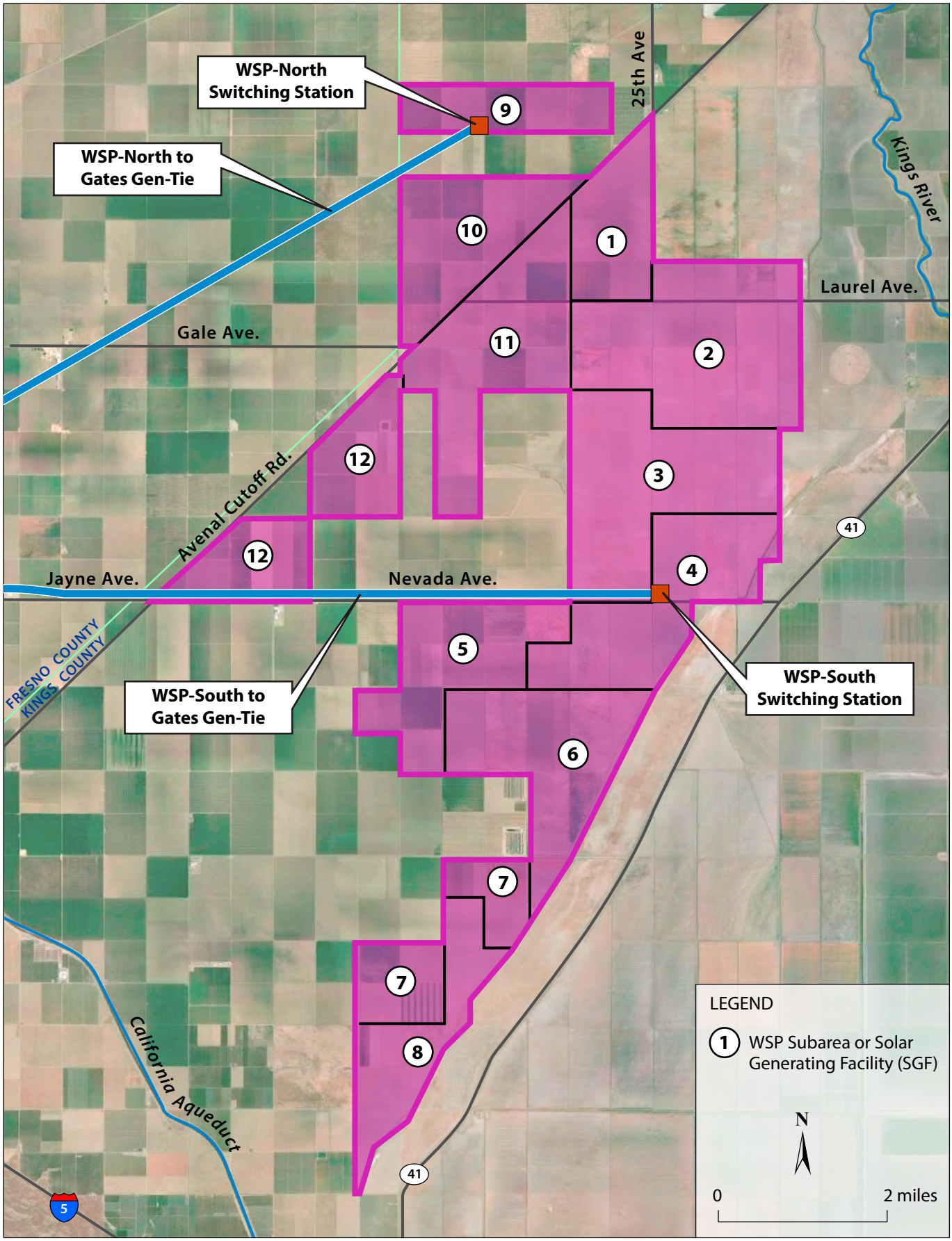
This page intentionally left blank



WSP Vicinity

Figure ES-2

This page intentionally left blank

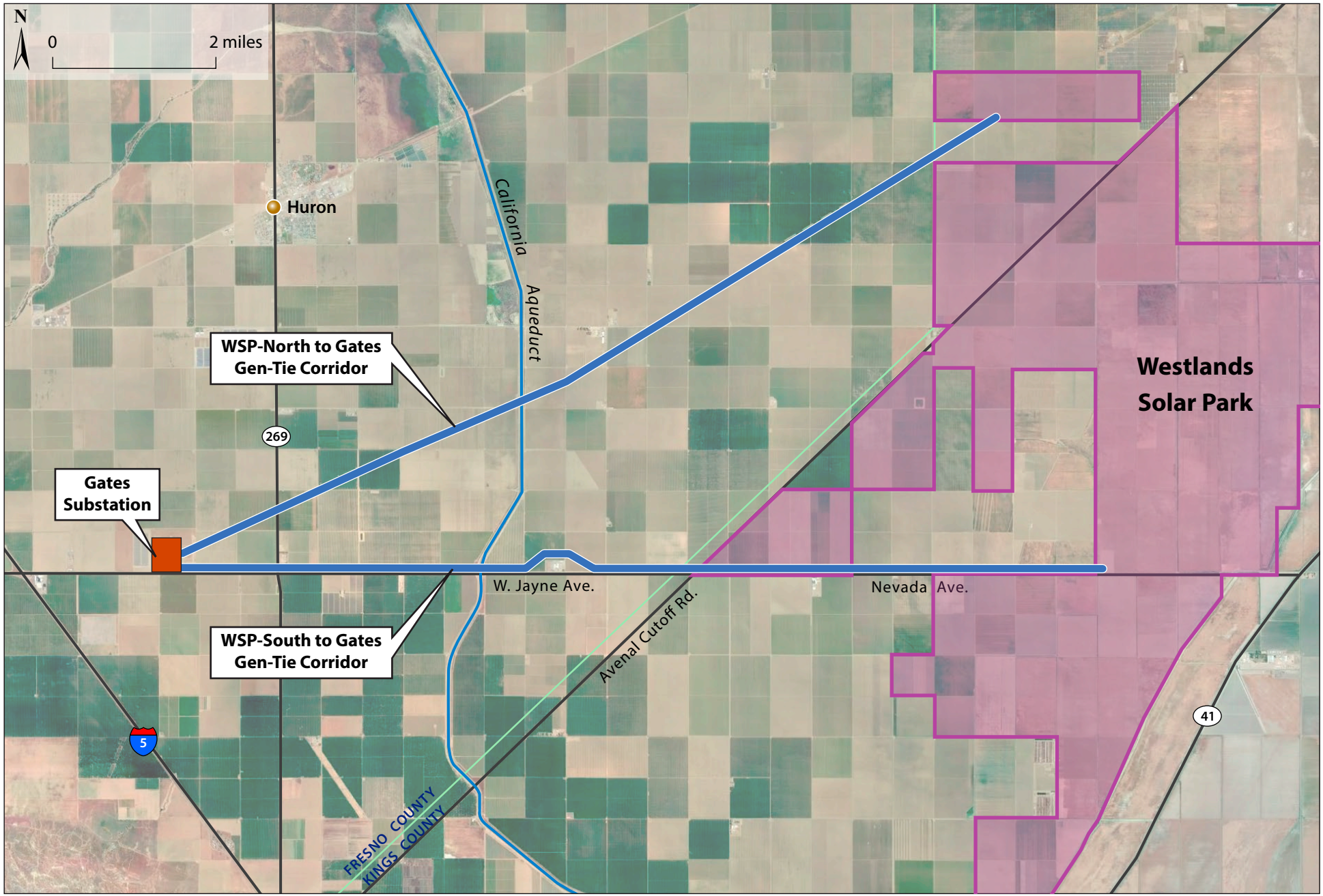


Base map: Google Earth, 2016

Westlands Solar Park Master Plan

Figure ES-3

This page intentionally left blank



Base Map: Google Earth, 2017

WSP Gen-Tie Corridors Plan

Figure ES-4

This page intentionally left blank

ES.3. PROJECT OBJECTIVES

Introduction

State CEQA Guidelines Section 15124(b) indicates that an EIR should include:

> "A statement of objectives sought by the proposed project. A clearly written statement of objectives will help the lead agency develop a reasonable range of alternatives to evaluate in the EIR and will aid the decision makers in preparing findings or a statement of overriding considerations, if necessary. The statement of objectives should include the underlying purpose of the project."

Overall Project Goals

The Westlands Solar Park Master Plan and WSP Gen-Tie Corridors Plan are intended to fulfill the following goals:

1) To provide an overall plan to guide and facilitate the beneficial reuse of drainage-impaired lands through development of renewable energy generation in the Westlands Competitive Renewable Energy Zone (CREZ).

2) To establish the preferred transmission gen-tie corridors to convey WSP-generated renewable energy to the statewide electricity market. Establishment of these routes would facilitate deliveries of renewable energy generation from drainage-impaired lands of Westlands Solar Park to the state electrical grid.

Project Objectives of the WSP Master Plan

The major goal articulated above encompasses the following specific objectives of the WSP Master Plan:

- Generate approximately 2,000 megawatts of clean, renewable electrical power utilizing solar photovoltaic (PV) technology and to deliver the electrical output to the State's electrical grid. (The estimated overall generating capacity for WSP could increase with improvements to solar PV module efficiency during the course of the buildout period for WSP.)

- Contribute to the solution of area-wide agricultural drainage problems by retiring all of the lands within the WSP plan area and providing productive reuse of those lands for renewable energy production as an alternative to irrigated agriculture.

- Provide for the economically viable and environmentally beneficial reuse of the WSP plan area's physically impaired agricultural soils.

- Contribute to the reduction in dependence on the aquifer for supplemental irrigation.

- Reduce cumulative salt loading to the groundwater resource.

- Constructively address the chronic shortage of surface water deliveries by removing the least productive farmland from irrigation by imported water, and by facilitating the redirection of scarce surface water allocations from the WSP plan area to more productive agricultural land within Westlands Water District that is not physically impaired by saline soils, high groundwater, or high selenium or other mineral concentrations. (This applies only to the privately-owned western half of the WSP plan area. The WWD-owned lands in the eastern half of the WSP plan area have already been retired from irrigated agriculture.)
- Provide utility-scale power generation on physically-impaired farmland in order to reduce pressure for renewable energy development on prime agricultural soils elsewhere.
- Provide for development of utility-scale solar generation facilities on highly disturbed lands which provide minimal habitat value for wildlife.
- Provide a low-impact alternative location for the siting of utility-scale renewable energy development that might otherwise occur on lands with high habitat value for protected wildlife species (such as the Mojave Desert).
- Provide utility-scale solar generation in a location that is already served by high-voltage transmission lines.
- Help implement the State's goal of increased electrical generation to 50 percent with renewable resources by 2030 under California's Renewables Portfolio Standard (RPS).
- Help implement the California Renewable Energy Transmission Initiative (RETI) by providing for the maximum development of up to 5,000 MW of the solar resource within the Westlands CREZ. (It is noted that the Westlands CREZ received the highest state-wide environmental ranking among all CREZs designated through the RETI process.)
- Contribute to overall reduction in greenhouse gas emissions by generating electricity that is not based on the combustion of fossil fuel, pursuant to The California Global Warming Solutions Act (AB 32), as extended and supplemented with SB 32 in 2016.
- Create new employment opportunities for local residents.
- Positively contribute to the local economy through stimulation of economic activity such as creation of secondary multiplier employment and the purchase of materials and services.
- Provide community benefits through increased property tax and sales tax revenues.

Project Objectives of the WSP Gen-Tie Corridors Plan

The objective of the WSP Gen-Tie Corridors Plan is as follows:

- Provide delivery of renewable solar power from the Westlands Solar Park to the State's electrical grid while minimizing impacts to the environment.

ES.4. SUMMARY OF IMPACTS AND MITIGATION MEASURES

Table ES-1 summarizes the impacts and mitigation measures as identified in this EIR for the Westlands Solar Park Master Plan and the WSP Gen-Tie Corridors Plan.

This page intentionally left blank

TABLE ES-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACTS	MITIGATION MEASURES (MMS)
3.1. AESTHETICS	
AES-1. Substantial Adverse Effect on a Scenic Vista	
Westlands Solar Park. The WSP plan area is not part of a recognized scenic vista, nor are scenic vistas visible from the WSP plan area; therefore, the WSP solar development would not have a substantial adverse effect on a scenic vista. **(*Less-than-Significant Impact*)**	No mitigation is required.
WSP Gen-Tie Corridors. The gen-tie corridors are not part of a recognized scenic vista, nor are scenic vistas visible from the gen-tie corridors vicinity; therefore, the WSP gen-tie lines would not have a substantial adverse effect on a scenic vista. **(*Less-than-Significant Impact*)**	No mitigation is required.
AES-2. Substantially Damage Scenic Resources	
Westlands Solar Park. The WSP plan area does not include scenic resources such as trees, rock outcroppings, historic buildings, or other scenic features, and is not near a State scenic highway; therefore, the WSP solar development would not substantially damage scenic resources. (***Less-than-Significant Impact*****)**	No mitigation is required.
WSP Gen-Tie Corridors. The gen-tie corridors vicinity does not include scenic resources such as trees, rock outcroppings, historic buildings, or other scenic features, and is not near a State scenic highway; therefore, the WSP gen-tie lines would not substantially damage scenic resources. (***Less-than-Significant Impact*****)**	No mitigation is required.
AES-3. Substantially Degrade Existing Visual Character and Quality	
Westlands Solar Park. The WSP solar development would result in changes to the visual character of the plan area; however, these changes would not substantially degrade the existing visual character or quality of the site and its surroundings. **(*Less-than-Significant Impact*)**	No mitigation is required.
WSP Gen-Tie Corridors. The WSP gen-tie corridors would result in changes to the visual character of the plan area; however, these changes would not substantially degrade the existing visual character and quality of the lands in their vicinity. **(*Less-than-Significant Impact*)**	No mitigation is required.

TABLE ES-1 (CONT'D)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.1. AESTHETICS (CONT'D)	
AES-4. Light and Glare	
***Westlands Solar Park*.** The WSP solar development would introduce new sources of light and low level glare to the plan area; however, this would not represent a substantial new source of light and glare and would not adversely affect day or nighttime views in the area. **(*Less-than-Significant Impact*)**	No mitigation is required.
***WSP Gen-Tie Corridors*.** The WSP gen-tie projects would not introduce new permanent sources of light or glare to their settings; and the night lighting that may be employed at work sites and staging areas would temporary and designed to be non-obtrusive**. (*Less-than-Significant Impact*)**	No mitigation is required.
AES-5. Cumulative Aesthetic Impacts	
***Westlands Solar Park*.** The WSP solar projects and the other cumulative projects would result in visual changes to their settings; however, these visual changes would not represent cumulatively significant visual impacts. **(*Less-than-Significant Cumulative Impact*)**	No mitigation is required.
***WSP Gen-Tie Corridors*.** The WSP gen-tie projects and the other cumulative projects would result in visual changes to their settings; however, these visual changes would not represent cumulatively significant visual impacts. **(*Less-than-Significant Cumulative Impact*)**	No mitigation is required.
3.2. AGRICULTURAL RESOURCES	
AG-1. Agricultural Land Conversion	
Westlands Solar Park. The WSP plan area includes "Farmland" which would be subject to solar development. **(*Less-than-Significant Impact with Mitigation*)**	In order to reduce the impacts of WSP solar projects to "Farmland" within the WSP plan area to less-than-significant levels, MMs AG-1, AG-2, and AG-3 shall be implemented in conjunction with each WSP solar project that is mapped as "Prime Farmland," "Unique Farmland," or "Farmland of Statewide Importance" under the version of DOC's "Important Farmland Kings County" map that is current at the time of approval of the CUP application of that WSP solar project. In addition, all WSP solar projects shall implement MM AG-2 and AG-3 pursuant to the Kings County Development Code. [*Continued on next page*.]

TABLE ES-1 (CONT'D)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.2. AGRICULTURAL RESOURCES (CONT'D)	
AG-1. Agricultural Land Conversion (Cont'd)	
Westlands Solar Park **(Cont'd)**	[*Continued from preceding page*.] **MM AG-1. Agricultural Management Plan** Prior to the issuance of a building permit for each WSP solar project proposed on "Farmland," the applicant shall submit, for review and approval by the Kings County Community Development Agency, an Agricultural Management Plan (AMP) that provides for the ongoing agricultural productivity of the site for the life of the project. The AMP shall specify that at least 90 percent of the site shall be vegetated with grasses and forbs and shall be managed for dry farm seasonal sheep grazing. The AMP shall include specific provisions for soil preparation and revegetation including specifications for a seed mix which is appropriate to the soil and climatic conditions in the absence of irrigation, methods of avoiding invasive species, and a list of acceptable vegetation that meets the dietary needs of sheep. The AMP shall include detailed provisions to ensure the successful establishment of the planned vegetative cover, and shall identify appropriate maintenance activities, including conditions under which herbicides may be used, and particularly the identification and selection of herbicides that are non-toxic to livestock and wildlife. The AMP shall also prescribe the management practices for sheep grazing. The AMP shall include provisions for ongoing monitoring and annual reporting of agricultural activity on the site to the Kings County Community Development Agency. The AMP shall also comply with the requirements of the *Kings County Development Code* related to weed abatement and pest control. **MM AG-2. Soil Reclamation Plan** Prior to the issuance of a building permit for each WSP solar project proposed anywhere within the WSP Plan Area, the applicant shall submit, for review and approval by the Kings County Community Development Agency, a Soil Reclamation Plan (Plan) for the restoration of the project site at the end of the project's useful life. The Plan shall contain an analysis of general pre-construction conditions of the solar facility site, and the site shall be photographically documented by the project proponent prior to the start of construction. [*Continued on next page*.]

TABLE ES-1 (CONT'D)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.2. AGRICULTURAL RESOURCES (CONT'D)	
AG-1. Agricultural Land Conversion (Cont'd)	
Westlands Solar Park **(Cont'd)**	[*Continued from preceding page*.] The plan shall contain specific measures to restore the soil to approximate its pre-project condition, including: (1) removal of all above-ground and below-ground fixtures, equipment, and non-agricultural driveways; (2) tilling to restore the sub-grade material to a density and depth consistent with its pre-project condition; (3) revegetation using a Kings County-approved grasses and forbs seed mixture designed to maximize revegetation with noninvasive species broadcast or drilled across the project site; and (4) application of a weed-free mulch spread, as needed, to stabilize the soil until germination occurs and young plants are established to facilitate moisture retention in the soil. Whether the project area has been restored to pre-construction conditions would be assessed by Kings County staff. All waste shall be disposed of or recycled in accordance with applicable laws. The applicant shall verify the completion of reclamation within 18 months after expiration of the project use permit with Kings County Planning Division staff. [Note: This mitigation measure would be a requirement for all WSP solar development under the Kings County Development Code which requires reclamation of all solar facility sites upon decommissioning.] **MM AG-3. Financial Assurance** Prior to the issuance of a building permit for each WSP solar project anywhere within the WSP Plan Area, the applicant shall post a performance or cash bond, submit a Certificate of Deposit, or provide such other financial assurances acceptable to the County, in an amount provided in an Engineer's Cost Estimate, approved by the Kings County Community Development Agency, to ensure completion of the activities under the Soil Reclamation Plan. Every 5 years from the date of completion of construction of the project, the applicant shall submit an updated Engineer's Cost Estimate for financial assurances for the Soil Reclamation Plan, which will be reviewed every 5 years by the Kings County Community Development Agency to determine if the amount of the assurances is sufficient to implement the Plan. [Note: This mitigation measure would be a requirement for all WSP solar development under the Kings County Development Code which requires financial assurance for reclamation of all solar facility sites upon decommissioning.]

TABLE ES-1 (CONT'D)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.2. AGRICULTURAL RESOURCES (CONT'D)	
AG-1. Agricultural Land Conversion (Cont'd)	
WSP Gen-Tie Corridors. The WSP gen-tie lines would result in the permanent loss of "Farmland" at tower locations. However, the losses would consist of a number of very small pieces of farmland displaced by the tower footings, which would be dispersed over the length of the corridors and would involve a total of approximately 2 acres of "Farmland" removal throughout the entire 23-mile length of the gen-tie corridors. This small acreage of farmland conversion is not considered a significant loss of "Farmland." **(*Less-than-Significant Impact*)**	No mitigation is required.
AG-2. Conflict with Agricultural Zoning and Williamson Act	
***Westlands Solar Park*.** The proposed solar land use is consistent with the existing Kings County agricultural zoning for the plan area, under which utility-scale solar development is a conditionally permitted use. Substantial portions of the WSP plan area are under Williamson Act or Farmland Security Zone Contracts; therefore, WSP solar projects would represent a potentially significant impact to contracted lands unless the solar projects meet the County's compatibility criteria for development on properties subject to Williamson Act programs. **(*Less-than-Significant Impact with Mitigation*)**	Implement MMs AG-1, AG-2, and AG-3. No additional mitigation is required.
***WSP Gen-Tie Corridors*.** Transmission lines are considered compatible uses under the Williamson Act, and are permitted uses in the applicable agricultural zoning districts in Kings and Fresno Counties, where the gen-tie corridors are located. **(*Less-than-Significant Impact*)**	No mitigation is required.
AG-3. Agricultural Land Use Conflicts	
***Westlands Solar Park*.** The WSP solar facilities would result in potential land use conflicts with nearby agricultural operations resulting from dust generation and potential introduction of invasive weed species. **(*Less-than-Significant Impact*)**	No mitigation is required.
***WSP Gen-Tie Corridors*.** Construction of the gen-tie projects could result in lost or damaged crops, and could temporarily impede agricultural operations or access to agricultural lands and facilities. **(*Less-than-Significant Impact with Mitigation*)**	In order to reduce the temporary and permanent impacts of the gen-tie projects on agricultural operations to less-than-significant levels, the following mitigation measures shall be implemented in conjunction with the gen-tie projects: [*Continued on next page*.]

TABLE ES-1 (CONT'D)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.2. AGRICULTURAL RESOURCES (CONT'D)	
AG-3. Agricultural Land Use Conflicts (Cont'd)	
WSP Gen-Tie Corridors **(Cont'd)**	[*Continued from preceding page*.] **MM AG-4. Mitigation for Permanent Impacts to Agricultural Operations**. The following measures shall be implemented to minimize permanent impacts to agricultural operations: ▪ During the engineering design stage, transmission monopoles shall be planned to be placed at the edges of farm fields and adjacent to existing roadways and farm lanes, to the extent feasible. ▪ During the engineering design stage, taller than typical transmission monopoles shall be planned where gen-tie lines pass through areas of permanent tree crops, in order to provide required clearances with tree crops and thus avoid permanent removal of tree crops within the transmission easements. **MM AG-5. Mitigation for Temporary Impacts to Agricultural Operations** The following measures shall be implemented to minimize and mitigate temporary impacts to agricultural operations during construction: ▪ During the engineering design stage, temporary work areas, such as construction staging and materials storage areas, and stringing and pulling sites, shall be planned to be located on lands that are not under agricultural cultivation, to the extent feasible. ▪ Prior to the commencement of construction/ground disturbing activities in a given area, the project proponent shall coordinate with the affected property owners in order to schedule construction activities so as to minimize disruption to agricultural operations. ▪ During construction, activity by vehicles, equipment, and personnel shall be limited to designated work and staging areas, and designated temporary access roads, to the extent feasible. ▪ Fences, gates, and other agricultural fixtures that are damaged during construction shall be repaired or replaced to restore them to their pre-construction condition, as soon as practicable after the damage occurs. ▪ Damage to crops as a result of construction shall be compensated. ▪ Upon completion of construction in a given area, all temporary disturbance areas shall be restored to pre-construction condition. Within cultivated fields, the disturbed areas will be tilled and restored to a condition suitable for farming.

TABLE ES-1 (CONT'D)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.2. AGRICULTURAL RESOURCES (CONT'D)	
AG-4. Conversion of Adjacent Farmland to Non-Agricultural Uses	
***Westlands Solar Park*.** The presence of WSP solar facilities adjacent to ongoing agricultural operations would not directly or indirectly result in the conversion of these adjacent farmlands to non-agricultural uses. **(*Less-than-Significant Impact*)**	No mitigation is required.
***WSP Gen-Tie Corridors*.** The presence of the gen-tie lines would not directly or indirectly result in the conversion of adjacent farmlands to non-agricultural uses. **(*Less-than-Significant Impact*)**	No mitigation is required.
AG-5. Cumulative Impacts to Agricultural Resources	
***Westlands Solar Park*.** The WSP solar development would not make a cumulatively considerable contribution to agricultural resource impacts, with mitigation; therefore, WSP solar development would not have a significant cumulative impact on agricultural resources, with mitigation. **(*Less-than-Significant Impact with Mitigation*)**	Implement MMs AG-1, AG-2, and AG-3. No additional mitigation is required.
***WSP Gen-Tie Corridors*.** The gen-tie projects would not make a cumulatively considerable contribution to agricultural resource impacts, with mitigation; therefore, the gen-tie projects would not have a significant cumulative impact on agricultural resources, with mitigation. **(*Less-than-Significant Impact*)**	Implement MMs AG-4, and AG-5. No additional mitigation is required.
3.3. AIR QUALITY AND CLIMATE CHANGE	
AQ-1. Construction Dust	
***Westlands Solar Park*.** Construction of the WSP solar projects would result in potentially high fugitive particulate matter emissions that would exceed Air District thresholds. **(*Less-than-Significant Impact with Mitigation*)**	Implement the dust control requirements of SJVAPCD Regulation VIII, as set forth in MM AQ-1 below. **MM AQ-1: Dust Control Measures** The following dust control measures of SJVAPCD Regulation VIII and its constituent rules shall be implemented during construction and decommissioning of all WSP solar facilities to reduce construction PM_{10} and $PM_{2.5}$ emissions to less than 15 tons per year for each project: [*Continued on next page*.]

TABLE ES-1 (CONT'D)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.3. AIR QUALITY AND CLIMATE CHANGE	
AQ-1. Construction Dust	
Westlands Solar Park **(Cont'd)**	[*Continued from preceding page.]* ▪ Effective dust suppression (e.g., watering) for land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill and demolition activities. ▪ Effective stabilization of all disturbed areas of a construction site, including storage piles, not used for seven or more days. ▪ Control of fugitive dust from on-site unpaved roads and off-site unpaved access roads. ▪ Removal of accumulations of mud or dirt at the end of the workday or once every 24 hours from public paved roads, shoulders and access ways adjacent to the site. ▪ Cease outdoor construction activities that disturb soils during periods with high winds. ▪ Record keeping for each day dust control measures are implemented. ▪ Limit traffic speeds on unpaved roads to 15 mph. ▪ Install sandbags or other erosion control measures to prevent silt runoff to public roadways. ▪ Landscape or replant vegetation in disturbed areas as quickly as possible. ▪ Prevent the tracking of mud or dirt on public roadways by limiting access to the construction sites. If necessary, use wheel washers for all exiting trucks, or wash off the tires or tracks of all trucks and equipment leaving the site. ▪ Suspend grading activity when winds (instantaneous gusts) exceed 25 mph or dust clouds cannot be prevented from extending beyond the site.
WSP Gen-Tie Corridors**.** Construction of the gen-tie lines would result in emissions of fugitive particulate matter but the emissions levels would not exceed Air District thresholds. **(*Less-than-Significant Impact*)**	No mitigation is required under CEQA. (However, the SJVAPCD will require implementation of the dust control requirements of SJVAPCD Regulation VIII.)

TABLE ES-1 (CONT'D)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.3. AIR QUALITY AND CLIMATE CHANGE (CONT'D)	
AQ-2. Construction Exhaust Emissions	
***Westlands Solar Park*.** Exhaust emissions from equipment and vehicles used in construction of WSP solar projects would exceed the applicable threshold for ozone precursor NO_x on a temporary basis, but would not exceed the applicable thresholds for other criteria pollutants. **(*Less-than-Significant Impact with Mitigation*)**	Implement MM AQ-2. **MM AQ-2: NO_x Reduction Measures during Construction** The following measures shall be implemented during construction of SGFs 1, 2, 3, 5, 6, and 7 to reduce construction NO_x emissions to less than 10 tons per year for each project: a. Utilize Low-Emission Construction Equipment. Develop a plan to use construction equipment with low NO_x emissions. This may include the use of equipment that meets US EPA Tier 3 standards (and equipment that meets Tier 4 standards, if available). b. Minimize Idling Time. Set idling time limit of 5 minutes or less for construction equipment. c. Worker Trip Reduction. Evaluate the feasibility of a work shuttle or carpool program to reduce emissions from worker travel. d. Delivery Truck Trip Reduction. Evaluate the feasibility of methods to reduce truck travel for delivery of equipment, by reducing the number of necessary truck trips. e. Execute Voluntary Emissions Reduction Agreements. Any solar projects for which the project-specific air quality analysis shows that the above mitigations will not be sufficient to reduce a project's construction emissions of NOx below 10 tons per year, the project proponent shall execute a Voluntary Emissions Reduction Agreement (VERA) with SJVAPCD which provides for further reduction of construction NO_x to reduce the project's NOx emissions to less than 10 tons per year.
***WSP Gen-Tie Corridors*.** Exhaust emissions from equipment and vehicles used in construction of the WSP gen-tie lines would not exceed the applicable threshold for ozone precursor NO_x or other criteria pollutants. **(*Less-than-Significant Impact*)**	No mitigation is required.

TABLE ES-1 (CONT'D)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.3. AIR QUALITY AND CLIMATE CHANGE (CONT'D)	
AQ-3. Operational Emissions	
***Westlands Solar Park*.** The emissions from the low-intensity operation and maintenance activities associated with the WSP solar facilities would not exceed applicable thresholds. **(*Less-than-Significant Impact*)**	No mitigation is required.
***WSP Gen-Tie Corridors*.** The emissions from the low-intensity inspection and maintenance activities associated with WSP gen-tie lines would not exceed applicable thresholds. **(*Less-than-Significant Impact*)**	No mitigation is required.
AQ-4. Carbon Monoxide Concentrations from Operational Traffic	
***Westlands Solar Park*.** Mobile emissions generated by WSP operational traffic would increase slightly at intersections in the vicinity; however, resulting CO concentrations would be below ambient air quality standards. **(*Less-than-Significant Impact*)**	No mitigation is required.
***WSP Gen-Tie Corridors*.** Mobile emissions generated by operational traffic associated with the gen-tie lines would result in a negligible increase in carbon monoxide concentrations at intersections in the vicinity, which would remain well within ambient air quality standards. **(*Less-than-Significant Impact*)**	No mitigation is required.
AQ-5. Exposure of Sensitive Receptors to Toxic Air Contaminants	
***Westlands Solar Park*.** Diesel exhaust emissions from construction and operational vehicles and equipment would expose nearby receptors to toxic air contaminants; however, given the relatively minor use of heavy equipment for solar project construction, the very small number of nearby sensitive receptors, the relatively short period of construction emissions that would occur in the vicinity of the sensitive receptors, and the very low intensity of solar operations, the overall health risks from toxic air contaminants would not be significant. **(*Less-than-Significant Impact*)**	No mitigation is required.
***WSP Gen-Tie Corridors*.** Diesel exhaust emissions from construction vehicles and equipment would expose nearby receptors to toxic air contaminants; however, given the dispersed nature of gen-tie line construction, the very small number of nearby sensitive receptors in the vicinity, the very short period of construction emissions that would occur in the vicinity of the nearest sensitive receptors, and the negligible level of operational emissions, the overall health risks from toxic air contaminants would not be significant. **(*Less-than-Significant Impact*)**	No mitigation is required.

TABLE ES-1 (CONT'D)

SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.3. AIR QUALITY AND CLIMATE CHANGE (CONT'D)	
AQ-6. Odors	
***Westlands Solar Park*.** The WSP solar projects would temporarily generate odors during construction. **(*Less-than-Significant Impact*)**	No mitigation is required.
***WSP Gen-Tie Corridors*.** The construction of the WSP gen-tie lines would temporarily generate odors during construction. **(*Less-than-Significant Impact*)**	No mitigation is required.
AQ-7. Consistency with Clean Air Planning Efforts	
***Westlands Solar Park*.** The WSP solar development would not conflict with the current clean air plan or obstruct its implementation. **(*Less-than-Significant Impact with Mitigation*)**	Implement MM AQ-2. No additional mitigation is required.
***WSP Gen-Tie Corridors*.** The construction of the WSP gen-tie lines would not conflict with the current clean air plan or obstruct its implementation. **(*Less-than-Significant Impact*)**	No mitigation is required.
AQ-8. Greenhouse Gas Emissions	
***Westlands Solar Park*.** The WSP solar projects would generate greenhouse gas emissions, either directly or indirectly, during construction and operation. However, the GHG emissions resulting from WSP solar development would be very small compared to the substantial net benefit to global climate change resulting from the clean power generation provided. **(*Less-than-Significant Impact*)**	No mitigation is required.
***WSP Gen-Tie Corridors*.** The WSP gen-tie projects would generate greenhouse gas emissions, either directly or indirectly, during construction and operation. However, the GHG emissions resulting from the transmission projects would be very small compared to the substantial net benefit to global climate change that would occur due to the delivery of renewable power that would be enabled by the gen-tie lines. **(*Less-than-Significant Impact*)**	No mitigation is required.

TABLE ES-1 (CONT'D)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.3. AIR QUALITY AND CLIMATE CHANGE (CONT'D)	
AQ-9. Consistency with GHG Reduction Plans and Policies	
***Westlands Solar Park*.** The WSP solar projects would help achieve the state's GHG reduction plans and policies, and would not conflict with their implementation. **(*Less-than-Significant Impact*)**	No mitigation is required.
***WSP Gen-Tie Corridors*.** The gen-tie lines would help achieve the state's GHG reduction plans and policies, and would not conflict with their implementation. **(*Less-than-Significant Impact*)**	No mitigation is required.
AQ-10. Cumulative Air Quality and Climate Change Impacts	
***Westlands Solar Park*.** Upon mitigation for air quality impacts associated with WSP solar development and other cumulative projects in the vicinity, the cumulative air quality impacts would be less than significant, and the contribution from WSP solar development would be not cumulatively considerable. **(*Less-than-Significant Cumulative Impact with Mitigation*)**	Implement MM AQ-1 and MM AQ-2. No additional mitigation is required.
***WSP Gen-Tie Corridors*.** Upon mitigation for air quality impacts associated with WSP gen-tie projects and other cumulative projects in the vicinity, the cumulative air quality impacts would be less than significant, and the contribution from WSP gen-ties would be not cumulatively considerable. **(*Less-than-Significant Cumulative Impact*)**	No mitigation is required.
3.4. BIOLOGICAL RESOURCES	
BIO-1. Impacts to Special Status Plants	
***Westlands Solar Park*.** The WSP solar development would not adversely affect special-status plants or their habitat since no special-status plant species or their habitat are present within the WSP plan area. **(*Less-than-Significant Impact*)**	No mitigation is required.
***WSP Gen-Tie Corridors*.** The WSP gen-tie projects would not adversely affect special-status plants or their habitat since no special-status plant species or their habitat are present within the gen-tie corridors. **(*Less-than-Significant Impact*)**	No mitigation is required.

TABLE ES-1 (CONT'D)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.4. BIOLOGICAL RESOURCES (CONT'D)	
BIO-2. Impacts to Special Status Animals Habitat	
Westlands Solar Park*.** The WSP solar development would have a potentially adverse impact on 14 special-status animal species which may utilize the plan area as breeding and/or foraging habitat. ***(Less-than-Significant with Mitigation)	Implement MMs BIO-1 (pre-project design measures), BIO-2 (raptors and migratory birds), BIO-3 (Swainson's hawk), BIO-4 (burrowing owl), BIO-5 (San Joaquin kit fox), and BIO-6 (American badger).
Westlands Transmission Corridors*.** The WSP gen-tie lines would have a potentially adverse impact on 13 special-status animal species which may utilize the gen-tie corridors as breeding and/or foraging habitat. ***(Less-than-Significant Impact with Mitigation)	Implement MMs BIO-1 (pre-project design measures), BIO-2 (raptors and migratory birds), BIO-3 (Swainson's hawk), BIO-4 (burrowing owl), BIO-5 (San Joaquin kit fox), and BIO-6 (American badger. **MM BIO-1: Pre-Project Design and Construction-Level Mitigation Measures** Prior to the final planning and design for all Westlands solar and transmission projects, the following measures shall be implemented to minimize impacts to special-status animal species: ▪ Conduct Seasonal Surveys for Potentially Affected Species. Prior to final planning and design of any transmission project, full coverage ground biological surveys shall be conducted by a qualified biologist within the potential disturbance areas of the transmission project to identify the presence or absence of individuals or habitat of special-status animal species. Surveys for each potentially affected species shall be conducted during seasons that are optimal for identification of individuals and habitat of the species. ▪ Identify Project Design Measures. The results of the biological surveys shall be utilized in the final planning and design of the transmission projects for the purpose of avoiding and minimizing the potential impacts to special-status animal species and their habitat to the extent feasible. ▪ Identify Construction Level Mitigation Measures. The results of the biological surveys shall be utilized in the project review and approval process to provide the basis for identifying construction-level mitigation measures to be implemented during project construction, operation, and decommissioning. Examples of mitigation measures that can be implemented at the project-specific level include the following: • Restrict outdoor lighting except as needed for safety. • Require that all lights be shielded, pointed downward, and directed away from adjacent habitat. • Require motion sensor-type nighttime lighting so that the lights do not stay on constantly and interfere with nocturnal wildlife activities. • Install perimeter fencing so that the bottom of the fence is 5 to 7 inches above the ground surface and knuckled under to create a smooth edge to allow for unimpeded movement of wildlife through the project sites. • Require that all vertical pipes associated with solar mounts or chain-link fencing be capped at the time of installation to prevent entrapment and death of birds. • Restrict the use of rodenticides in accordance with the Pest Management and Weed Abatement Plans required by Kings County for each solar project.

TABLE ES-1 (CONT'D)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.4. BIOLOGICAL RESOURCES (CONT'D)	
BIO-3. Disturbance to Active Raptor and Migratory Bird Nests	
***Westlands Solar Park*.** The WSP solar development could result in disturbance to active nests of raptors and migratory birds. **(*Less-than-Significant Impact with Mitigation*)**	Implement MM BIO-2 (a-d) (raptors and migratory birds).
***WSP Gen-Tie Corridors*.** The construction of the WSP gen-tie projects could result in disturbance to active nests of raptors and migratory birds. **(*Less-than-Significant Impact with Mitigation*)**	Implement MM BIO-2 (a-c) (raptors and migratory birds). **MM BIO-2. Avoidance Measures for Raptor and Migratory Bird Nests** The following measures shall be implemented to minimize disturbance to any active raptor and other bird nests, as necessary, prior to the construction and decommissioning of any WSP solar project or gen-tie project: a. Pre-Construction Surveys for Active Nests. If tree removal, site preparation, grading, construction, or decommissioning is planned to occur within the breeding period (i.e., between February 1 and August 31), a qualified biologist shall be retained to conduct pre-construction surveys for active nests of migratory birds within 14 days of the onset of these activities. If construction or decommissioning activity is planned to commence outside the breeding period, no pre-construction surveys are required for nesting birds and raptors. b. Exclusion Zones for Active Nests. If any active nests are discovered in or near the planned construction zones on or adjacent to a project site, the biologist shall consult with the California Department of Fish and Wildlife to identify a suitable construction-free buffer around the nest. This exclusion zone shall be identified on the ground with flagging or fencing, and shall be maintained until the biologist has determined that the young have fledged. c. Tailgate Training for Workers. All construction and operations workers on shall be trained by a qualified biologist. The tailgate training shall include a description of the Migratory Bird Treaty Act, instructions on what to do if an active nest is located, and the importance of capping pipes and pipe-like structures standing upright in order to avoid birds falling into the pipes and getting stuck. d. Capping of Hollow Poles and Posts. Should any vertical tubes, such as solar mount poles, chain link fencing poles, or any other hollow tubes or poles be utilized on a project site, the poles shall be capped immediately after installation to prevent entrapment of birds.

TABLE ES-1 (CONT'D)

SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.4. BIOLOGICAL RESOURCES (CONT'D)	
BIO-4. Impacts to Swainson's Hawks	
***Westlands Solar Park*.** The WSP solar development could result in: 1) disturbance to Swainson's hawk breeding if active Swainson's hawk nests are found on or adjacent to the WSP plan area prior to solar development **(*Less-than-Significant Impact with Mitigation*)** and; 2) the loss of Swainson's hawk foraging habitat. **(*Less-than-Significant Impact*)**	Implement MM BIO-3 (Swainson's hawk).
***WSP Gen-Tie Corridors*.** The construction of the WSP gen-tie projects could result in disturbance to Swainson's hawk breeding if active Swainson's hawk nests are found on or adjacent to the gen-tie corridors prior to construction. **(*Less-than-Significant Impact with Mitigation*)**. The gen-tie projects would not have an adverse effect on Swainson's hawk foraging habitat. **(*Less-than-Significant Impact*)**	Implement MM BIO-3 (Swainson's hawk). MM BIO-3. Swainson's Hawk Mitigation In order to reduce the impacts of WSP solar and gen-tie projects to Swainson's hawk breeding habitat to less-than-significant levels, the following mitigation measures shall be implemented in conjunction with each project: **a.** Preconstruction Surveys for Swainson's Hawk. During the nesting season prior to construction or decommissioning within 0.5 miles of a potential nest tree, preconstruction surveys shall be conducted within the project site and lands within a 0.5-mile radius of the site to identify any nesting pairs of Swainson's hawks. These surveys shall conform to the requirements of CDFW as presented in *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley,* Swainson's Hawk Technical Advisory Committee, May 31, 2000. Preconstruction surveys are not required for portions of projects that are more than 0.5 miles from a potential nest tree. b. Nest Avoidance Measures. If any active Swainson's hawk nests are discovered in within 0.5 miles of any planned construction or decommissioning activity, appropriate avoidance/protective measures shall be implemented as identified by a qualified biologist in consultation with the California Department of Fish and Wildlife. The avoidance/protective measures shall remain in place until the biologist has determined that the young have fledged. **c.** Tailgate Training for Workers. All workers shall attend a tailgate training session conducted by a qualified biologist. The training is to include a description of the species, a brief summary of their biology, and minimization measures and instructions on what to do if a Swainson's hawk is observed on a solar project site.

TABLE ES-1 (CONT'D)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.4. BIOLOGICAL RESOURCES (CONT'D)	
BIO-5. Impacts to Burrowing Owls	
***Westlands Solar Park*.** The WSP solar development could result in the following impacts to burrowing owls: 1) disturbance to active nests of burrowing owls; 2) mortality of individual burrowing owls, and; 3) reduction of foraging habitat for burrowing owls. **(*Less-than-Significant Impact with Mitigation*)**	Implement MM BIO-4 (a-e) (borrowing owls and habitat).
***WSP Gen-Tie Corridors*.** The WSP gen-tie projects could result in the following impacts to burrowing owls: 1) disturbance to active nests of burrowing owls, and; 2) mortality of individual burrowing owls **(*Less-than-Significant Impacts with Mitigation*)**. The WSP gen-tie projects would not adversely affect foraging habitat for burrowing owls. **(*Less-than-Significant Impact*)**.	Implement MM BIO-4 (a-d) (burrowing owls). **MM BIO-4. Burrowing Owl Mitigation** The following measures shall be implemented to minimize impacts to the individual burrowing owls and burrowing owl breeding and foraging habitat, as necessary, prior to construction or decommissioning of any WSP solar or gen-tie project: a. Pre-Construction Surveys for Burrowing Owl. Pre-construction surveys for burrowing owls shall be conducted by a qualified biologist no more than 14 days in advance of the on-set of ground-disturbing activity at each project site. These surveys shall be conducted according to methods described in the *Staff Report on Burrowing Owl Mitigation* (CDFG 2012). The surveys shall cover all areas of suitable burrowing owl habitat within project site. b. Avoidance of Active Burrowing Owl Nests During Breeding Season. If pre-construction surveys are undertaken during the breeding season (February through August) and active nest burrows are located within or near construction or decommissioning zones, a construction-free buffer of 250 feet shall be established around all active owl nests. These exclusion zones shall be enclosed with temporary fencing, and construction equipment and workers shall not be allowed to enter the enclosed setback areas. Exclusion zones shall remain in place for the duration of the breeding season. After the breeding season (i.e., once all young have left the nest), passive relocation of any remaining owls may take place, but only under the conditions described below. **c.** Avoidance of Occupied Burrows During Non-Breeding Season, and Passive Relocation of Burrowing Owls. During the non-breeding season (September through January), any burrows occupied by resident owls in areas planned for construction or decommissioning disturbance shall be protected by a construction-free buffer with a radius of 250 feet around each burrow. Passive relocation of resident owls is not recommended by CDFW where it can be avoided. If passive relocation is not avoidable, resident owls may be relocated to alternative habitat nearby. The relocation of resident owls shall be conducted according to a relocation plan prepared by a qualified biologist.

TABLE ES-1 (CONT'D)

SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.4. BIOLOGICAL RESOURCES (CONT'D)	
BIO-5. Impacts to Burrowing Owls (Cont'd)	
***WSP Gen-Tie Corridors*. (Cont'd)**	[*Continued from preceding page*.] d. Tailgate Training for Workers. All workers shall attend a tailgate training session conducted by a qualified biologist. The training is to include a description of the species, a brief summary of their biology, and minimization measures and instructions on what to do if a burrowing owl is observed on a solar project site. e. Mitigation for Loss of Burrowing Owl Habitat. If it is determined that burrowing owl nest(s) are located on or near the solar project site, the biologist shall coordinate with the project applicant and resource agency to determine whether relocation of these nest(s) is unavoidable. If so, measure #1 below (restrictive covenants) would apply. If the on-site or nearby nest(s) are to remain in place, the biologist shall determine whether sufficient foraging habitat is available on adjacent or nearby lands, and if so, no further mitigation is required. (Approximately 200 acres of year-round foraging habitat within about 2 miles of the burrowing owl burrow is required to support a burrowing owl pair.) If it is determined that there is insufficient nearby foraging habitat, the biologist shall determine the amount of onsite foraging habitat that is required to sustain the burrowing owl nest. In this case, the potential impact to foraging habitat shall be either avoided through implementation of measure #2 below (onsite buffer zone), or compensated through implementation of measure #1 (restrictive covenants) or measure #3 (long-term agreement on adjacent lands) below: 1) Establishment of restrictive covenants with a 1:1 ratio for foraging/breeding habitat preservation. These restrictive covenants would include habitats determined to be suitable for foraging and/or breeding year-round and seasonal use. 2) Establishment of permanent buffer zones of adequate size around current burrowing owl locations. These buffer zones would require adequate management for the life of the project and buffer zones to ensure the buffer area remains suitable for burrowing owls. Annual monitoring of the suitability of management activities may be required by CDFW. 3) Short or long-term compensation for foraging habitat by providing farmers in adjacent lands incentives to plant particular crops known to be suitable forage habitat for burrowing owls (i.e. winter wheat, alfalfa, etc.) and to enact a farmer burrowing owl safety program where farmers are trained how to reduce burrowing owl mortalities on their lands and farm driveways. A 1:1 ratio would be required to be in the program as long as the project is active.

TABLE ES-1 (CONT'D)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.4. BIOLOGICAL RESOURCES (CONT'D)	
BIO-6. Impacts to San Joaquin Kit Fox	
Westlands Solar Park. The WSP solar development could result in potential impacts to individual kit foxes, and could result in impacts to kit fox habitat, if present. **(*Less-than-Significant Impact with Mitigation*)**	Implement MM BIO-5 (kit fox).
***WSP Gen-Tie Corridors*.** The gen-tie projects could result in potential impacts to individual kit foxes, and could result in impacts to kit fox habitat, if present. **(*Less-than-Significant Impact with Mitigation*)**	Implement MM BIO-5 (kit fox). **MM BIO-5 San Joaquin Kit Fox Mitigation** In order to minimize the potential for impacts to San Joaquin kit fox, the following measures shall be implemented in conjunction with the construction and decommissioning of each WSP solar and gen-tie project: a. Pre-Construction Surveys for Kit Fox. Pre-construction surveys for San Joaquin kit fox shall be conducted by a qualified biologist no less than 14 days and no more than 30 days prior to the beginning of ground disturbance, construction or decommissioning activities, or any other activities likely to impact the San Joaquin kit fox. These surveys shall be conducted in accordance with the USFWS Standard Recommendations. The primary objective is to identify kit fox habitat features (e.g., potential dens and refugia) on the solar project and gen-tie sites and evaluate their use by kit foxes. If an active kit fox den is detected within or immediately adjacent to the area of work, the USFWS shall be contacted immediately to determine the best course of action. b. Kit Fox Avoidance Measures. Should kit fox be found to be using a project site during preconstruction surveys, the project shall avoid the habitat occupied by kit fox and the Sacramento Field Office of the USFWS and the Fresno Field Office of CDFW shall be notified. c. Tailgate Training for Worker. All workers on solar and gen-tie projects shall attend a tailgate training session conducted by a qualified biologist. The training is to include a description of the species, a brief summary of their biology, and minimization measures and instructions on what to do if a San Joaquin Kit Fox is observed on a project site. d. Minimization of Potential Disturbance to Kit Fox. Whether or not kit foxes are found to be present, all permanent and temporary construction activities, decommissioning activities, and other types of project-related activities shall be carried out in a manner that minimizes potential disturbance to kit foxes. This shall be accomplished through implementation of the protection measures set forth in "*U.S. Fish and Wildlife Service Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior To or During Ground Disturbance*" (USFWS 2011) which are set forth in full in Table BIO-1.

Table BIO-1

U.S. FISH AND WILDLIFE SERVICE STANDARDIZED RECOMMENDATIONS
FOR PROTECTION OF THE ENDANGERED SAN JOAQUIN KIT FOX PRIOR TO OR DURING GROUND DISTURBANCE

CONSTRUCTION AND ON-GOING OPERATIONAL REQUIREMENTS

1. Project-related vehicles should observe a daytime speed limit of 20-mph throughout the site in all project areas, except on county roads and State and Federal highways; this is particularly important at night when kit foxes are most active. Night-time construction should be minimized to the extent possible. However if it does occur, then the speed limit should be reduced to 10-mph. Off-road traffic outside of designated project areas should be prohibited.
2. To prevent inadvertent entrapment of kit foxes or other animals during the construction phase of a project, all excavated, 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. If the trenches cannot be closed, one or more escape ramps constructed of earthen-fill or wooden planks shall be installed. Before such holes or trenches are filled, they should be thoroughly inspected for trapped animals. If at any time a trapped or injured kit fox is discovered, the Service and the California Department of Fish and Wildlife (CDFW) shall be contacted as noted under measure 13 referenced below.
3. Kit foxes are attracted to den-like structures such as pipes and may enter stored pipes and become trapped or injured. All construction pipes, culverts, or similar structures with a diameter of 4-inches or greater that are stored at a construction site for one or more overnight periods should be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is discovered inside a pipe, that section of pipe should not be moved until the USFWS has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved only once to remove it from the path of construction activity, until the fox has escaped.
4. All food-related trash items such as wrappers, cans, bottles, and food scraps should be disposed of in securely closed containers and removed at least once a week from a construction or project site.
5. No firearms shall be allowed on the project site. (This prohibition does not apply to law enforcement personnel such as Sheriff's Deputies or the Fire Marshal.)
6. No pets, such as dogs or cats, should be permitted on the project site to prevent harassment, mortality of kit foxes, or destruction of dens.
7. Use of rodenticides and herbicides in project areas should be restricted. This is necessary to prevent primary or secondary poisoning of kit foxes and the depletion of prey populations on which they depend. All uses of such compounds should observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other State and Federal legislation, as well as additional project-related restrictions deemed necessary by the USFWS. If rodent control must be conducted, zinc phosphide should be used because of a proven lower risk to kit fox. A representative shall be appointed by the project proponent who will be the contact source for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured or entrapped kit fox. The representative will be identified during the employee education program and their name and telephone number shall be provided to the USFWS.
8. A representative shall be appointed by the project proponent who will be the contact source for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured or entrapped kit fox. The representative will be identified during the employee education program and their name and telephone number shall be provided to the USFWS. (*Continued on next page*.)

Table BIO-1 (Cont'd)

U.S. FISH AND WILDLIFE SERVICE STANDARDIZED RECOMMENDATIONS FOR PROTECTION OF THE ENDANGERED SAN JOAQUIN KIT FOX PRIOR TO OR DURING GROUND DISTURBANCE

CONSTRUCTION AND ON-GOING OPERATIONAL REQUIREMENTS

9. An employee education program should be conducted for any project that has anticipated impacts to kit fox or other endangered species. The program should consist of a brief presentation by persons knowledgeable in kit fox biology and legislative protection to explain endangered species concerns to contractors, their employees, and military and/or agency personnel involved in the project. The program should include the following: A description of the San Joaquin kit fox and its habitat needs; a report of the occurrence of kit fox in the project area; an explanation of the status of the species and its protection under the Endangered Species Act; and a list of measures being taken to reduce impacts to the species during project construction and implementation. A fact sheet conveying this information should be prepared for distribution to the previously referenced people and anyone else who may enter the project site.
10. Upon completion of the project, all areas subject to temporary ground disturbances, including storage and staging areas, temporary roads, pipeline corridors, etc., should be re-contoured if necessary, and revegetated to promote restoration of the area to pre-project conditions. An area subject to "temporary" disturbance means any area that is disturbed during the project, but after project completion will not be subject to further disturbance and has the potential to be revegetated. Appropriate methods and plant species used to revegetate such areas should be determined on a site-specific basis in consultation with the USFWS, California Department of Fish and Wildlife (CDFW), and revegetation experts.
11. In the case of trapped animals, escape ramps or structures should be installed immediately to allow the animal(s) to escape, or the USFWS should be contacted for guidance.
12. Any contractor, employee, or military or agency personnel who are responsible for inadvertently killing or injuring a San Joaquin kit fox shall immediately report the incident to their representative. This representative shall contact the CDFW immediately in the case of a dead, injured or entrapped kit fox. The CDFW contact for immediate assistance is State Dispatch at (916) 445-0045. They will contact the local warden or Mr. Paul Hoffman, the wildlife biologist, at (530) 934-9309. The USFWS should be contacted at the numbers below.
13. The Sacramento Fish and Wildlife Office and CDFW shall be notified in writing within three working days of the accidental death or injury to a San Joaquin kit fox during project related activities. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal and any other pertinent information. The USFWS contact is the Chief of the Division of Endangered Species, at the addresses and telephone numbers below. The CDFW contact is Mr. Paul Hoffman at 1701 Nimbus Road, Suite A, Rancho Cordova, California 95670, (530) 934-9309.
14. New sightings of kit fox shall be reported to the California Natural Diversity Database (CNDDB). A copy of the reporting form and a topographic map clearly marked with the location of where the kit fox was observed should also be provided to the Service at the address below.

Any project-related information required by the Service or questions concerning the above conditions or their implementation may be directed in writing to the U.S. Fish and Wildlife Service at:

Endangered Species Division
2800 Cottage Way, Suite W2605
Sacramento, California 95825-1846
(916) 414-6620 or (916) 414-6600

TABLE ES-1 (CONT'D)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.4. BIOLOGICAL RESOURCES (CONT'D)	
BIO-7. Impacts to American Badgers	
Westlands Solar Park. The WSP solar development could result in the following impacts to American badgers: 1) mortality of individual American badgers, and; 2) reduction of foraging, breeding, and denning habitat for American badgers. **(*Less-than-Significant Impacts with Mitigation*)**	Implement MM BIO-6 (American badger).
WSP Gen-Tie Corridors. The gen-tie projects could result in the following impacts to American badgers: 1) mortality of individual American badgers, and; 2) reduction of foraging, breeding, and denning habitat for American badgers. **(*Less-than-Significant Impacts with Mitigation*)**	Implement BIO-6 (American badger). **MM BIO-6. American Badger Mitigation** The following measures shall be implemented to minimize impacts to the American badger, as necessary prior to the construction and decommissioning of the WSP solar and gen-tie projects: a. Preconstruction Surveys for American Badger. During the course of pre-construction surveys prescribed for other species, a qualified biologist shall also determine the presence or absence of badgers prior to the start of each individual project. If badgers are found to be absent, a report shall be written to the applicant so stating and no other mitigations for the protection of badgers would be warranted. b. Avoidance of Active Badger Dens and Monitoring. If an active badger den is identified during pre-construction surveys within or immediately adjacent to an area subject to construction or decommissioning, a construction-free buffer of up to 300 feet (or distance specified by CDFW) shall be established around the den. Once the biologist has determined that badgers have vacated the burrow, the burrow can be collapsed or excavated, and ground disturbance can proceed. Should the burrow be determined to be a natal or reproductive den, and because badgers are known to use multiple burrows in a breeding burrow complex, a biological monitor shall be present onsite during construction activities in the vicinity of the burrows to ensure the buffer is adequate to avoid direct impact to individuals or natal/reproductive den abandonment. The monitor shall be required onsite until it is determined that young are of an independent age and construction or decommissioning activities would not harm individual badgers. c. Tailgate Training for Workers. All workers on the solar and gen-tie projects shall attend a tailgate training session conducted by a qualified biologist. The training is to include a description of the species, a brief summary of their biology, and minimization measures and instructions on what to do if an American Badger is observed on a project site.

TABLE ES-1 (CONT'D)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.4. BIOLOGICAL RESOURCES (CONT'D)	
BIO-8. Impacts to Wildlife Movement Corridors	
Westlands Solar Park. WSP solar development would not interfere with the home range and dispersal movements of native wildlife. **(*Less-than-Significant Impact with Mitigation*)**	Implement MM BIO-7. **MM BIO-7. Wildlife Movement Mitigation** The following measure shall be implemented to ensure continued wildlife movement through the WSP plan area for the life of the WSP solar facilities: a. Wildlife Friendly Fencing. To allow for ground movement of wildlife through the plan area, all fencing around and within the WSP solar facilities shall to consist of "wildlife friendly" fencing with a continuous 5-inch separation from the top of the ground to the lowest point of the bottom of the fence along all fencing. Such fencing shall not be electrified.
WSP Gen-Tie Corridors. The gen-tie projects would not interfere with the home range and dispersal movements of native wildlife. **(*Less-than-Significant Impact*)**	No mitigation is required.
BIO-9. Impacts to Jurisdictional Waters and Riparian Habitats	
Westlands Solar Park. Although WSP solar development is intended to avoid the permanent canals, tailwater pond, and associated riparian zones and wetlands within the plan area, the WSP solar projects could potentially result in disturbance to Waters of the U.S., waters of California, and/or associated riparian habitat. **(*Less-than-Significant Impact with Mitigation*)**	Implement MM BIO-8 (wetlands and riparian).
WSP Gen-Tie Corridors. Although the WSP gen-tie corridors are intended to avoid permanent canals, ditches, and the California Aqueduct, and associated riparian zones and wetlands, the gen-tie projects could potentially result in disturbance to Waters of the U.S., waters of California, and/or associated riparian habitat. **(*Less-than-Significant Impact with Mitigation*)**	Implement MM BIO-8 (wetlands and riparian). **MM BIO-8. Avoid Wetlands, Jurisdictional Waters, and Riparian Communities** In order to avoid the potential for impacts to wetlands, jurisdictional waters, and riparian communities, the following measures shall be implemented in conjunction with the construction and decommissioning of each solar and gen-tie project: a. Survey All Defined Drainage Channels Subject to Encroachment. Prior to the preparation of final project plans that establish the locations of solar facilities and gen-tie facilities, any channels that would likely be considered waters of the United States and/or waters of the state of California and are subject to encroachment shall be field surveyed. The surveys shall be conducted by a wetland biologist capable of identifying ordinary high water (the limit of USACE and RWQCB jurisdiction) and top of bank (the limit of CDFW jurisdiction). [*Continued on next page.*]

TABLE ES-1 (CONT'D)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.4. BIOLOGICAL RESOURCES (CONT'D)	
BIO-9. Impacts to Waters of the U.S. and Riparian Habitats (Cont'd)	
***WSP Gen-Tie Corridors*. (Cont'd)**	[*Continued from preceding page.*] All defined channels observed within the area of potential encroachment during this survey shall be mapped in detail and be suitable for purposes of planning the final locations of solar and gen-tie facilities. b. Avoidance of Drainage Channels. Using the detailed mapping of drainage channels, each solar and gen-tie project shall be planned such that the placement of fill and structures shall avoid disturbance to the bed and bank of all defined canal or drainage channels to the extent feasible. Avoidance of defined channels may require the use of clear-span bridges, or adjusting tower locations within the gen-tie corridors. c. Mitigate Unavoidable Impacts to Wetlands. In the event that a canal or drainage channel cannot be feasibly avoided by project construction, i.e., where a solar project site would be inaccessible without constructing a new bridge over a canal or ditch, a wetland delineation shall be required to determine the extent of USACE and/or State jurisdiction over such features. If waters to be filled are determined to be Waters of the U.S. or the State, the following permits may be required: 1) a Clean Water Act permit from the USACE, 2) a Water Quality Certification from the RWQCB, and/or 3) a Lake or Streambed Alteration Agreement from the CDFW. These permits are usually issued on the condition that a mitigation plan be prepared and approved by the applicable state and federal regulatory agencies noted above.
BIO-10. Local Policies or Ordinances Protecting Biological Resources	
***Westlands Solar Park*.** The WSP solar development would not conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. **(*Less-than-Significant Impact*)**	No mitigation is required.
***WSP Gen-Tie Corridors*.** The gen-tie projects would not conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. **(*Less-than-Significant Impact*)**	No mitigation is required.

TABLE ES-1 (CONT'D)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.4. BIOLOGICAL RESOURCES (CONT'D)	
BIO-11. Habitat Conservation Plans	
Westlands Solar Park. The WSP solar development would not conflict with an adopted habitat conservation plan, a natural community conservation plan, or any other approved local, regional or state habitat conservation plan. **(*Less-than-Significant Impact*)**	No mitigation is required.
WSP Gen-Tie Corridors. The WSP gen-tie projects would not conflict with an adopted habitat conservation plan, a natural community conservation plan, or any other approved local, regional or state habitat conservation plan. **(*Less-than-Significant Impact*)**	No mitigation is required.
BIO-12. Cumulative Impacts to Biological Resources	
Westlands Solar Park. Upon mitigation for biological impacts associated with WSP solar development and other cumulative projects in the vicinity, the cumulative biological impacts would be less than significant, and the contribution from WSP solar development would be not cumulatively considerable. **(*Less-than-Significant Cumulative Impact with Mitigation*)**	Implement MMs BIO-1 through BIO-8. No additional mitigation is required.
WSP Gen-Tie Corridors. Upon mitigation for biological impacts associated with WSP gen-tie projects and other cumulative projects in the vicinity, the cumulative biological impacts would be less than significant, and the contribution from the gen-tie projects would be not cumulatively considerable. **(*Less-than-Significant Cumulative Impact with Mitigation*)**	Implement MMs BIO-1 through BIO-8. No additional mitigation is required.

TABLE ES-1 (CONT'D)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.5. CULTURAL RESOURCES AND TRIBAL CULTURAL RESOURCES	
CUL-1. Disturbance to Cultural Resources	
Westlands Solar Park. There are no known historical or archaeological resources within the WSP plan area or its immediate vicinity, and the probability that any are present is low. However, it is possible that previously unknown cultural resources may be present within the WSP plan area which could be adversely affected by grading, excavation, and construction for the solar facilities. **(*Less-than-Significant Impact with Mitigation*)**	Implement MM CUL-1.
WSP Gen-Tie Corridors. There is a low to moderate potential for buried archaeological resources to be present within the gen-tie corridors. There is a potential that ground disturbing activities associated with the gen-tie projects could adversely affect previously unknown cultural resources. **(*Less-than-Significant Impact with Mitigation*)** There are two previously recorded historic-era built environment features within or adjacent to the WSP gen-tie corridors; however, these features would be adversely affected by the gen-tie projects. . **(*Less-than-Significant Impact*)**	Implement MM CUL-1. **MM CUL-1: Protection of Cultural Resources** In order to avoid the potential for impacts to historic and prehistoric archaeological resources, the following measures shall be implemented in conjunction with the construction of each WSP solar generating facility and gen-tie project: a. Conduct Surveys for Cultural Resources. Prior to any ground disturbance for each WSP solar facility and gen-tie project, the project proponent for each respective project shall undertake the following: • Retain the services of a qualified archaeological consultant meeting the Secretary of Interior's Professional Qualifications Standards in prehistoric or historical archaeology, and having expertise in California prehistoric and historical archaeology. • Authorize the archaeological consultant to conduct a site-specific field investigation for cultural resources, and prepare a report containing determinations of significance of any identified cultural resources and recommendations for mitigation, as appropriate. • Prior to any ground disturbance, the applicant shall offer interested Tribes the opportunity to provide a Native American Monitor during ground disturbing activities during both construction and decommissioning. Tribal participation would be dependent upon the availability and interest of the Tribe. [*Continued on next page.*]

TABLE ES-1 (CONT'D)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.5. CULTURAL RESOURCES AND TRIBAL CULTURAL RESOURCES (CONT'D)	
CUL-1. Disturbance to Cultural Resources (Cont'd)	
WSP Gen-Tie Corridors **(Cont'd)**	[*Continued from preceding page*.] b. Conduct Pre-Construction Worker Training and Tribal Coordination. Prior to the issuance of building permits for each WSP solar facility and gen-tie project, the project proponent for each respective project shall undertake the following: • Authorize the archaeological consultant to provide a pre-construction briefing to supervisory personnel of any excavation contractor to alert them to the possibility of exposing significant historic or prehistoric archaeological resources within the project area. The briefing shall discuss any archaeological objects that could be exposed, the need to stop excavation at the discovery site, and the procedures to follow regarding discovery protection and notification of the project proponent and archaeological team. • The applicant shall note on any plans that require ground disturbing excavation that there is a potential for exposing buried cultural resources. • Prior to initiation of construction, the applicant shall conduct a site visit in concert with the appropriate Native American Tribe(s) in order to provide an opportunity for the Tribe(s) to assess the site and discuss their recommendations. During the site visit a cultural sensitivity class will be taught by the appropriate Native American Tribe(s) for the construction crew. c. Implement Procedures for Inadvertent Discoveries. The following procedures shall be implemented to address inadvertent discovery of cultural resources during construction: • Retain the professional archaeologist basis during all ground disturbing activity during construction and decommissioning for the project to review, identify and evaluate cultural resources that may be inadvertently exposed during construction. Should previously unidentified cultural resources be discovered during ground disturbing activities of the project, the project proponent shall cease work within 100 feet of the resources, and Kings County Community Development Agency (CDA) (or the Fresno County Department of Public Works and Planning for discoveries in Fresno County) shall be notified immediately. The archaeologist shall review and evaluate any discoveries to determine if they are historical resource(s) and/or unique archaeological resources under CEQA. [*Continued on next page*.]

TABLE ES-1 (CONT'D)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.5. CULTURAL RESOURCES AND TRIBAL CULTURAL RESOURCES (CONT'D)	
CUL-1. Disturbance to Cultural Resources (Cont'd)	
WSP Gen-Tie Corridors **(Cont'd)**	[*Continued from preceding page*.] • If the professional archaeologist determines that any cultural resources exposed during the initial ground survey or during construction constitute a historical resource and/or unique archaeological resource, he/she shall notify the project proponent and other appropriate parties of the evaluation and recommended mitigation measures to mitigate the impact to a less-than-significant level. Mitigation measures may include avoidance, preservation in-place, recordation, additional archaeological testing and data recovery, among other options. Treatment of any significant cultural resources shall be undertaken with the approval of the Kings County CDA (or the Fresno County Department of Public Works and Planning for discoveries in Fresno County). The archaeologist shall document the resources using DPR 523 forms and file said forms with the California Historical Resources Information System (CHRIS), Southern San Joaquin Valley Information Center. The resources shall be photo-documented and collected by the archaeologist for submittal to the appropriate Native American Tribe(s). The archaeologist shall be required to submit to the applicable County for review and approval a report of the findings, including determinations as to the eligibility of any identified sources for listing in the California Register of Historical Resources, and method of curation or protection of the resources. Further grading or site work within the area of discovery shall not be allowed until the preceding steps have been taken.
CUL-2. Disturbance to Human Remains	
Westlands Solar Park. Ground disturbing activities associated with the development of the WSP solar facilities could disturb previously undiscovered human remains, including those interred outside of formal cemeteries. **(*Less-than-Significant Impact with Mitigation*)**	Implement MM CUL-2.
WSP Gen-Tie Corridors. Ground disturbing activities associated with the construction of the gen-tie projects could disturb previously undiscovered human remains, including those interred outside of formal cemeteries. **(*Less-than-Significant Impact with Mitigation*)**	Implement MM CUL-2. [*Continued on next page*.]

TABLE ES-1 (CONT'D)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.5. CULTURAL RESOURCES AND TRIBAL CULTURAL RESOURCES (CONT'D)	
CUL-2. Disturbance to Human Remains (Cont'd)	
WSP Gen-Tie Corridors **(Cont'd)**	[*Continued from preceding page*.] **MM CUL-2: Protection of Buried Human Remains** In order to avoid the potential for impacts to any buried human remains which may be present, the following measures shall be implemented, as necessary, in conjunction with the construction of each WSP solar facility and gen-tie project: ▪ Pursuant to State Health and Safety Code Section 7050.5(e) and Public Resources Code Section 5097.98, if human bone or bone of unknown origin is found at any time during on- or off-site construction, all work shall stop in the vicinity of the find and the Coroner of Kings or Fresno County, as applicable, shall be notified immediately. If the remains are determined to be Native American, the Coroner shall notify the California State Native American Heritage Commission (NAHC), who shall identify the person believed to be the Most Likely Descendant (MLD). The project proponent and MLD, with the assistance of the professional archaeologist, shall make all reasonable efforts to develop an agreement for the treatment of human remains and associated or unassociated funerary objects with appropriate dignity (CEQA Guidelines Sec. 15064.5(d)). The agreed upon treatment shall address the appropriate excavation, removal, recordation, analysis, custodianship, curation, and final disposition of the human remains and associated or unassociated funerary objects. California Public Resources Code allows 48 hours for the MLD to make their wishes known to the landowner after being granted access to the site. If the MLD and the other parties do not agree on the reburial method, the project will follow Public Resources Code Section 5097.98(e) which states that ". . . the landowner or his or her authorized representative shall reinter the human remains and items associated with Native American burials with appropriate dignity on the property in a location not subject to further subsurface disturbance."
CUL-3. Impacts to Tribal Cultural Resources	
Westlands Solar Park. There are no known tribal cultural resources within the WSP plan area or its immediate vicinity, and the probability that any are present is low. However, it is possible that previously unknown tribal cultural resources may be present within the WSP plan area which could be adversely affected by grading, excavation, and construction for the solar facilities. . **(*Less-than-Significant Impact with Mitigation*)**	Implement MM CUL-3 below, and MMs CUL-1 and CUL-2 above.

TABLE ES-1 (CONT'D)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.5. CULTURAL RESOURCES AND TRIBAL CULTURAL RESOURCES (CONT'D)	
CUL-3. Impacts to Tribal Cultural Resources (Cont'd)	
WSP Gen-Tie Corridors. There are no known tribal cultural resources within the WSP gen-tie corridors or their immediate vicinity, and the probability that any are present is low. However, it is possible that previously unknown tribal cultural resources may be present within the WSP plan area which could be adversely affected by grading, excavation, and construction for the solar facilities. **(*Less-than-Significant Impact with Mitigation*)**	Implement MM CUL-3 below, and MMs CUL-1 and CUL-2 above. **MM CUL-3. Protection of Tribal Cultural Resources** In order to avoid the potential for impacts to tribal cultural resources which may be present, the following measures shall be implemented, as necessary, in conjunction with the construction of each WSP solar facility and gen-tie project: • Consult with Native American Tribe(s). Prior to public release of the CEQA document for each project, the lead agency shall initiate consultation with Native American Tribe(s) which have a traditional and cultural affiliation to the project site, in accordance with Public Resources Code Section 21080.3.1. • Mitigation for Tribal Cultural Resources. If any tribal cultural resources are identified through consultation with the Native American Tribe(s), the lead agency shall consult and work with the tribe(s) to develop feasible mitigation measures or alternatives that would avoid impacts, or develop and implement treatment plans that would substantially lessen impacts on identified tribal cultural resources, in accordance with Public Resources Code Section 21083(b)(2).
CUL-4. Cumulative Impacts to Cultural Resources	
Westlands Solar Park. The WSP solar development would not make a cumulatively considerable contribution to cultural resource impacts with mitigation; therefore, the WSP solar projects would not have a significant cumulative impact on cultural resources with mitigation. **(*Less-than-Significant Cumulative Impact with Mitigation*)**	Implement MM CUL-1, MM CUL-2, and MM CUL-3. No additional mitigation is required.
WSP Gen-Tie Corridors. The WSP gen-tie projects would not make a cumulatively considerable contribution to cultural resource impacts with mitigation; therefore, the gen-tie projects would not have a significant cumulative impact on cultural resources with mitigation. **(*Less-than-Significant Cumulative Impact with Mitigation*)**	Implement MM CUL-1, MM CUL-2, and MM CUL-3. No additional mitigation is required.

TABLE ES-1 (CONT'D)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.6. GEOLOGY AND SOILS	
GEO-1. Rupture of Known Earthquake Fault	
Westlands Solar Park. There are no known active or potentially active earthquake faults in proximity to the WSP plan area; therefore, the potential for impact from fault rupture is extremely low. **(*Less-than-Significant Impact*)**	No mitigation is required.
WSP Gen-Tie Corridors. There are no known active or potentially active earthquake faults in proximity to the Westlands Gen-Tie corridors. **(*Less-than-Significant Impact*)**	No mitigation is required
GEO-2. Seismic Ground Shaking	
Westlands Solar Park. Moderate ground shaking expected within the WSP plan area during a moderate to severe earthquake could potentially result in damage to solar generating facilities and other structures. (***Less-than-Significant Impact with Mitigation***)	Implement MM GEO-1a. **MM GEO-1a. Minimization of Seismic Ground Shaking Hazard within WSP** Prior to the issuance of building permits for solar projects within the WSP plan area, the project applicants for each solar project shall provide documentation to Kings County demonstrating that all project structures are designed in accordance with the seismic design criteria of the California Building Code. The project applicants shall also implement all recommendations contained in the project-specific geotechnical engineering reports with respect to grading, soil preparation, building and equipment foundation design, solar array support specifications, pavement design, excavations, and other construction considerations.
WSP Gen-Tie Corridors. Strong ground shaking expected within the WSP gen-tie corridors during a moderate to severe earthquake could potentially result in damage to transmission towers and lines. **(*Less-than-Significant Impact with Mitigation*)**	Implement MM GEO-1b. **MM GEO-1b. Minimization of Seismic Ground Shaking Hazard for WSP Gen-Tie Corridors** Prior to final project design for the gen-tie lines, geotechnical investigations shall be performed to evaluate ground accelerations for design of all planned transmission structures to ensure conformance with applicable design standards for the anticipated seismic forces.

TABLE ES-1 (CONT'D)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

3.6. GEOLOGY AND SOILS (CONT'D)	
GEO-3. Liquefaction, Lateral Spreading, and Seismic Settlement	
Westlands Solar Park. There is a potential for seismically-induced, liquefaction, lateral spreading, and settlement within the WSP plan area which could result in damage to foundations and structures. **(*Less-than-Significant Impact with Mitigation*)**	Implement MM GEO-2a. **MM GEO-2a. Minimization of Ground Failure Hazard within WSP** Prior to the issuance of the first building permit for each solar project within WSP, the applicant shall retain a qualified geotechnical engineer to undertake a soils investigation to determine the potential for liquefaction, lateral spreading, and seismic settlement within the project area and to prepare recommendations and foundation design specifications to mitigate potential damage to project structures due to these soil hazards. Any mitigation identified in the geotechnical reports shall be subject to review and approval by the Kings County Building Official and made conditions of building permit approval.
WSP Gen-Tie Corridors. There is a potential for seismically-induced, liquefaction, lateral spreading, and settlement within portions of the WSP Gen-Tie Corridors which could result in damage to foundations and structures. **(*Less-than-Significant Impact with Mitigation*)**	Implement MM GEO-2b. **MM GEO-2b. Minimization of Ground Failure Hazards for WSP Gen-Tie Corridors** Prior to final project design for the gen-tie lines, the project proponent shall retain a qualified geotechnical engineer to undertake a soils investigation to determine the potential for liquefaction, lateral spreading, and seismic settlement within the transmission corridors and to prepare recommendations and foundation design specifications to mitigate potential damage to project structures due to these soil hazards.
GEO-4. Landslides and Slope Failures	
Westlands Solar Park. The level terrain of the WSP plan area has a very low potential for landslides, although there is a moderate potential for localized slope failures along the channels and levees of streams and irrigation canals, ditches, and ponds. **(*Less-than-Significant Impact with Mitigation*)**	Implement MM GEO-3a. **MM GEO-3a. Minimization of Landslide and Slope Failure Hazard within WSP** Prior to the issuance of the first building permit for each solar project within WSP, the applicant shall retain a qualified geotechnical engineer to undertake a soils investigation to determine the potential for slope failures and to prepare recommendations to mitigate or avoid potential damage to project structures due to potential slope failures. Any mitigation identified in the geotechnical report shall be subject to review and approval by the County Building Official and made conditions of building permit approval.

TABLE ES-1 (CONT'D)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.6. GEOLOGY AND SOILS (CONT'D)	
GEO-4. Landslides and Slope Failures (Cont'd)	
WSP Gen-Tie Corridors. The relatively level terrain of the valley areas traversed by the WSP gen-tie corridors has a very low potential for landslides, although there is a moderate potential for localized slope failures along the channels and levees of streams and irrigation canals, ditches, and ponds. **(*Less-than-Significant Impact with Mitigation*)**	Implement MM GEO-3b. **MM GEO-3b. Minimization of Landslide and Slope Failure Hazards for Westlands Transmission Projects** Prior to final project design for the transmission lines and related facilities, the project proponent shall retain a qualified geotechnical engineer to undertake a soils investigation to determine the potential for landslides and/or slope failures within the gen-tie corridors and to prepare recommendations to mitigate or avoid potential damage to project structures due to potential slope failures.
GEO-5. Expansive Soils	
Westlands Solar Park. Most soil units within the WSP plan area have moderate to high potential for soils expansion which could result in potential damage to foundations and equipment pads. **(*Less-than-Significant Impact with Mitigation*)**	Implement MM GEO-4a. **MM GEO-4a. Minimization of Soils Expansion Hazard within WSP** Prior to the issuance of the first building permit for each solar project within WSP, the applicant shall retain a qualified geotechnical engineer to undertake a soils investigation to determine the potential for soils expansion and to prepare recommendations and foundation design specifications to mitigate potential damage to project structures due to potential soils expansion. Any mitigations identified the geotechnical report shall be subject to review and approval by the County Building Official and made conditions of building permit approval.
WSP Gen-Tie Corridors. Most soil units within the WSP Gen-Tie Corridors consist of alluvial soils which have moderate to high potential for soils expansion which could result in potential damage to tower foundations and pads. (***Less-than-Significant Impact with Mitigation***)	Implement MM GEO-4b. **MM GEO-4b. Minimization of Soils Expansion Hazard for Westlands Transmission Projects** Prior to final project design for the gen-tie lines and related facilities, the project proponent shall retain a qualified geotechnical engineer to undertake a soils investigation to determine the potential for soils expansion within the gen-tie corridors and to prepare recommendations and foundation design specifications to mitigate potential damage to project structures due to soils expansion.

TABLE ES-1 (CONT'D)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.6. GEOLOGY AND SOILS (CONT'D)	
GEO-6. Erosion Potential	
Westlands Solar Park. The development of the WSP plan area would create the potential for water- and wind-related soil erosion during construction and decommissioning of the WSP solar generating facilities. **(*Less-than-Significant Impact with Mitigation*)**	Implement MM HYD-1 (prepare and implement SWPPPs). No additional mitigation is required
WSP Gen-Tie Corridors. The construction of the gen-tie lines would create the potential for water- and wind-related soil erosion during construction of the gen-tie facilities. **(*Less-than-Significant Impact with Mitigation*)**	Implement MM HYD-1 (prepare and implement SWPPPs). No additional mitigation is required
GEO-7. Shallow Groundwater	
Westlands Solar Park. Shallow groundwater conditions within the WSP plan area could adversely affect below-ground electrical conduits. **(*Less-than-Significant Impact with Mitigation*)**	Implement MM GEO-6. **MM GEO-5. Shallow Groundwater Protection within WSP** Prior to the issuance of the first building permit for each solar development within WSP, the applicant shall retain a qualified geotechnical engineer to undertake a soils investigation to determine the potential for adverse groundwater impacts to buried electrical conduit and to prepare recommendations and design specifications to avoid potential damage from groundwater. Any mitigation identified the geotechnical report shall be subject to review and approval by the County Building Official and made conditions of building permit approval.
WSP Gen-Tie Corridors. Localized shallow groundwater conditions may occur within the WSP gen-tie corridors; however, since the gen-tie facilities would not include below-ground elements apart from concrete tower footings, there would be no adverse effect upon the gen-tie facilities. **(*Less-than-Significant Impact*)**	No mitigation is required

TABLE ES-1 (CONT'D)

SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.6. GEOLOGY AND SOILS (CONT'D)	
GEO-8. Soil Corrosivity	
Westlands Solar Park. Corrosive soils within the WSP plan area could potentially cause damage to on-site structures, foundations, and utilities. **(*Less-than-Significant Impact with Mitigation*)**	Implement MM GEO-6a. **MM GEO-6a. Corrosion Protection for Buried Structures within WSP** Prior to the issuance of the first building permit for each solar development within WSP, the applicant shall retain a qualified geotechnical engineer to undertake a soils investigation to determine the potential for soil corrosivity and to prepare recommendations and design specifications to mitigate potential damage to underground project elements due to potentially corrosive soils. Any mitigation identified in the geotechnical report shall be subject to review and approval by the County Building Official and included as conditions of building permit approval.
WSP Gen-Tie Corridors. Corrosive soils within the WSP Gen-Tie Corridors could potentially cause damage to on-site structures and foundations. **(*Less-than-Significant Impact with Mitigation*)**	Implement MM GEO-6b. **MM GEO-6b. Corrosion Protection for Buried Structures within WSP Gen-Tie Corridors** Prior to final project design for the gen-tie lines and related facilities, the project proponent shall retain a qualified geotechnical engineer to undertake a soils investigation to determine the potential for soil corrosivity and to prepare recommendations and design specifications to mitigate potential damage to underground project elements due to potentially corrosive soils.
GEO-9. Soil Suitability for Wastewater Disposal	
Westlands Solar Park. The operational domestic wastewater disposal requirements for each WSP solar facility would be provided either by septic tanks with no leachfields (wastewater would be disposed off-site), or portable chemical toilets, depending on the size of the solar facility, and by portable chemical toilets during construction. Therefore, on-site soils would not be utilized for wastewater disposal. **(*No Impact*)**	No mitigation is required
WSP Gen-Tie Corridors. During construction, wastewater disposal requirements would be provided by portable chemical toilets. There would be no need for wastewater disposal during gen-tie line operation. Therefore, on-site soils would not be utilized for wastewater disposal. **(*No Impact*)**	No mitigation is required

TABLE ES-1 (CONT'D)

SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.6. GEOLOGY AND SOILS (CONT'D)	
GEO-10. Mineral Resources	
Westlands Solar Park. The construction of the WSP solar facilities would increase the demand for local sand and gravel resources. This increased demand would represent a small portion of the aggregate resources in the area and would not result in a loss of availability of a known mineral resource. While an abandoned oil field is located near the WSP plan area, WSP solar development would not interfere with access to known mineral or oil and gas resources. Therefore, WSP solar development would not result in the loss of availability of an important mineral resource recovery site. **(*Less-than-Significant Impact*)**	No mitigation is required
WSP Gen-Tie Corridors. The construction of the gen-tie projects would increase the demand for local sand and gravel resources. This increased demand would represent a small portion of the aggregate resources in the area and would not result in a loss of availability of a known mineral resource. While an abandoned oil field and several abandoned oil wells are located near the WSP gen-tie corridors, the construction of the gen-tie projects would not interfere with access to known mineral or oil and gas resources. No portion of the WSP gen-tie corridors is located in proximity to locally-important recovery sites for mineral resources, or oil and gas resources, and therefore would not result in the loss of availability of an important mineral resource recovery site. **(*Less-than-Significant Impact*)**	No mitigation is required
GEO-11. Cumulative Geology and Soils Impacts	
Westlands Solar Park. The potential cumulative geology and soils impacts resulting from WSP solar development, combined with impacts from related cumulative projects, would be less than cumulatively significant under near-term and far-term conditions, with mitigation. **(*Less-than-Significant Cumulative Impact with Mitigation*)**	Implement MMs GEO-1a, GEO-2a, GEO-3a, GEO-4a, GEO-5, GEO-6a, and HYD-1. No additional mitigation is required
WSP Gen-Tie Corridors. The potential cumulative geology and soils impacts resulting from the WSP Gen-Tie projects, combined with impacts from related cumulative projects, would be less than cumulatively significant under near-term and far-term conditions, with mitigation. **(*Less-than-Significant Cumulative Impact with Mitigation*)**	Implement MMs GEO-1a, GEO-2a, GEO-3a, GEO-4a, GEO-6a, and HYD-1. No additional mitigation is required.

TABLE ES-1 (CONT'D)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.7. HAZARDS AND HAZARDOUS MATERIALS	
HAZ-1. Potential Hazard from Routine Transport, Use, or Disposal of Hazardous Materials	
Westlands Solar Park. There is a potential for release of hazardous materials during construction, operation, and decommissioning of WSP solar facilities. **(*Less-than-Significant Impact with Mitigation*)**	Implement MM HAZ-1 (below), and MM HYD-1 (in Section *3.8. Hydrology and Water Quality*). **MM HAZ-1. Protection from Hazardous Materials** In order to protect the public from potential release of hazardous materials, the project applicant shall prepare and implement a Hazardous Materials Business Plan (HMBP) in accordance with the requirements of the Kings County Public Health Department Environmental Services Division and the Hazardous Materials Release Response Plan and Inventory Act of 1985. Under this state law, the applicant is required to prepare an HMBP to be submitted to the Kings County Public Health Department, Environmental Health Services Division, which is the Certified Unified Program Agency (CUPA) for Kings County. The HMBP shall include a hazardous material inventory, emergency response procedures, training program information, and basic information on the location, type, quantity, and health risks of hazardous materials stored, used, or disposed of at the proposed project site, and procedures for handling and disposing of unanticipated hazardous materials encountered during construction. The HMBP shall include an inventory of the hazardous waste generated on site, and shall specify procedures for proper disposal. As required, hazardous waste would be transported by a licensed hauler and disposed of at a licensed facility. According to the HMBP reporting requirements, workers must be trained to respond to releases of hazardous materials in accordance with State and federal laws and regulations governing hazardous materials and hazardous waste (e.g., HAZWOPER training required by OSHA). Any accidental release of small quantities of hazardous materials shall be promptly contained and abated in accordance with applicable regulatory requirements and reported to the Environmental Health Services Division. As the CUPA for Kings County, the Environmental Health Services Division of the County Public Health Department is responsible for implementation and enforcement of HMBPs. Implementation of the HMBPs for WSP solar projects would ensure that minor spills or releases of hazardous materials would not pose a significant risk to the public or the environment.
WSP Gen-Tie Corridors. There is a potential for release of hazardous materials during construction and operation of the WSP gen-tie lines. **(*Less-than-Significant Impact with Mitigation*)**	Implement MM HAZ-1 (below), and MM HYD-1 (in Section *3.8. Hydrology and Water Quality*).

TABLE ES-1 (CONT'D)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.7. HAZARDS AND HAZARDOUS MATERIALS (CONT'D)	
HAZ-2. Hazards Related to Past and Recent Agricultural Operations	
Westlands Solar Park. The ground disturbing activities associated with installation of WSP solar facilities could pose environmental health hazards by: 1) mobilizing petroleum products and agricultural chemicals that may be present in the soil near sites of agricultural chemical mixing and storage of lubricants; and 2) mobilizing environmentally persistent "legacy" pesticides that may still be present in hazardous concentrations. **(*Less-than-Significant Impact with Mitigation*)**	Implement MM HAZ-2a. **MM HAZ-2a. Conduct Soil Sampling and Remediation as Applicable** Prior to initiation of ground disturbing activities at each SGF site, soil samples shall be taken from areas of potential contamination and tested for hazard levels of constituents of concern, in accordance with work plans prepared by qualified professionals. Any soils that exceed regulatory limits for hazardous materials shall be removed or otherwise remediated prior to any ground disturbing activity, to the satisfaction of the responsible regulatory agencies in accordance with applicable laws and regulations. The specific areas within the WSP plan area that are to be sampled and tested for contamination shall include soils beneath and surrounding the following locations: • Current and known former locations of fertilizer storage tanks and mixing areas. • Locations of 55-gallon oil drums at fertilizer storage/mixing sites and agricultural production wells. • Random locations within fields subject to potential past application of environmentally persistent pesticides.
WSP Gen-Tie Corridors. The ground disturbing activities associated with gen-tie line construction could pose an environmental health hazard by mobilizing pesticides that may be present in hazardous concentrations in the soil due to past agricultural operations. **(*Less-than-Significant Impact with Mitigation*)**	Implement MM HAZ-2b. **MM HAZ-2b. Conduct Soil Sampling and Remediation as Applicable** Prior to initiation of ground disturbing activities for each WSP gen-tie project, soil samples shall be taken from areas of potential contamination and tested for hazard levels of constituents of concern, in accordance with work plans prepared by qualified professionals. Any soils that exceed regulatory limits for hazardous materials shall be removed or otherwise remediated prior to any ground disturbing activity, to the satisfaction of the responsible regulatory agencies in accordance with applicable laws and regulations.
HAZ-3. Worker Exposure to Valley Fever Fungal Spores	
Westlands Solar Park. The soils of the WSP plan area may contain Valley Fever fungal spores, which can be released to the atmosphere during soil disturbing activity and expose construction workers to risk of Valley Fever. **(*Less-than-Significant Impact with Mitigation*)**	Implement MM HAZ-3.

TABLE ES-1 (CONT'D)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.7. HAZARDS AND HAZARDOUS MATERIALS (CONT'D)	
HAZ-3. Worker Exposure to Valley Fever Fungal Spores (Cont'd)	
WSP Gen-Tie Corridors. The soils within the gen-tie corridors may contain Valley Fever fungal spores, which can be released to the atmosphere during soil disturbing activity and expose construction workers to risk of Valley Fever. **(*Less-than-Significant Impact with Mitigation*)**	Implement MM HAZ-3. **MM HAZ-3. Protection of Construction Workers from Valley Fever** In order to protect construction workers from Valley Fever, the following measures shall be implemented prior to and during ground disturbing activity: ▪ Implement the Dust Control Plan to be approved for each project by the San Joaquin Valley Air Pollution District under District Rule 8021 prior to ground disturbing activity. ▪ Prepare and implement a respiratory protection program for construction workers, as required under California Code of Regulations, Title 8, Section 5144.
HAZ-4. Hazards from Abandoned Oil and Gas Wells	
Westlands Solar Park. The abandoned oil and gas wells within the WSP plan area may release gases that pose a potential health and safety hazard to workers and the public. **(*Less-than-Significant Impact with Mitigation*)**	Implement MM HAZ-4a. **MM HAZ-4a. Safety and Remedial Measures for Abandoned Oil Wells within WSP** Prior to initiation of ground disturbing activities for each WSP solar project, the following measures shall be implemented to minimize potential hazards associated with abandoned oil wells: ▪ The site planning for each WSP solar project shall include mapping of all known oil wells on the plans. ▪ The site plans shall show a minimum setback of 25 feet from all oil wells. The site plans shall show these setback zones to be free of all structural, mechanical, and electrical elements. Solar facilities may be planned within the 25-foot setback zone only upon the written authorization of the Division of Oil, Gas, and Geothermal Resources (DOGGR), and subject to the conditions and requirements of DOGGR for such encroachments. ▪ Prior to the issuance of the building permit for each solar project, all known oil wells within the solar project site shall be relocated in the field. The plugged/abandoned wells shall be inspected and tested for leakage prior to construction activities. Any required remedial operations shall be carried out in accordance with the requirements of DOGGR. If the well was not abandoned or abandoned properly, as determined by DOGGR, the well shall be abandoned or re-abandoned to the satisfaction of DOGGR.

TABLE ES-1 (CONT'D)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.7. HAZARDS AND HAZARDOUS MATERIALS (CONT'D)	
HAZ-4. Hazards from Abandoned Oil and Gas Wells (Cont'd)	
Westlands Solar Park **(Cont'd)**	[*Continued from preceding page*.] ▪ In the event that an abandoned or unrecorded oil well is damaged or uncovered during construction activities, the contractor shall contact DOGGR to obtain information on the required remedial operations, and shall obtain prior written approval from DOGGR to perform the remedial operations. Copies of all correspondence to and from DOGGR concerning oil wells within the WSP plan area shall be submitted to the Kings County Community Development Agency.
WSP Gen-Tie Corridors. The abandoned oil and gas wells in the vicinity of the gen-tie corridors may release gases that pose a potential health and safety hazard to workers and the public. **(*Less-than-Significant Impact with Mitigation*)**	Implement MM HAZ-4b. **MM HAZ-4b. Safety and Remedial Measures for Abandoned Oil Wells Near WSP Gen-Tie Projects** Prior to initiation of ground disturbing activities for each WSP gen-tie project, the following measures shall be implemented to minimize potential hazards associated with abandoned oil wells: ▪ The detailed route planning for gen-tie line alignment shall include mapping of all known oil wells on the plans. ▪ The gen-tie project plans shall show a minimum setback of 25 feet from all oil wells. The plans shall show these setback zones to be free of all structural, mechanical, and electrical elements. Gen-tie facilities may be planned within the 25-foot setback zone only upon the written authorization of the Division of Oil, Gas, and Geothermal Resources (DOGGR), and subject to the conditions and requirements of DOGGR for such encroachments. ▪ Prior to the initiation of ground disturbing activities, all known oil wells in the immediate vicinity of the gen-tie project alignment shall be relocated in the field. The plugged/abandoned wells shall be inspected and tested for leakage prior to construction activities. Any required remedial operations shall be carried out in accordance with the requirements of DOGGR. If the well was not abandoned or abandoned properly, as determined by DOGGR, the well shall be abandoned or re-abandoned to the satisfaction of DOGGR. [*Continued on next page*.]

TABLE ES-1 (CONT'D)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.7. HAZARDS AND HAZARDOUS MATERIALS (CONT'D)	
HAZ-4. Hazards from Abandoned Oil and Gas Wells (Cont'd)	
WSP Gen-Tie Corridors **(Cont'd)**	[*Continued from preceding page*.] ▪ In the event that an abandoned or unrecorded oil well is damaged or uncovered during construction activities, the contractor shall contact DOGGR to obtain information on the required remedial operations, and shall obtain prior written approval from DOGGR to perform the remedial operations. ▪ Copies of all correspondence to and from DOGGR concerning oil wells within the WSP gen-tie corridors area shall be submitted to the Community Development Agency/Department of the affected county.
HAZ-5. Safety Hazards Associated with Existing Natural Gas Pipelines and Power Transmission Lines	
Westlands Solar Park. Construction activity in the vicinity of the existing natural gas pipelines and electrical transmission lines crossing the WSP plan area are subject to safety hazards associated with those facilities. **(*Less-than-Significant Impact with Mitigation*)**	Implement MM HAZ-5. **MM HAZ-5. Safety and Remedial Measures for Existing Natural Gas Pipelines and Power Transmission Lines** Prior to any construction-related activity planned to occur within the existing easements for gas pipelines or power transmission lines, the project proponent or contractor shall coordinate with the easement holder to obtain authorization for such activity by the easement holder, and shall follow all applicable safety procedures and protocols required by the easement holder for such activity. The construction contract specifications for the WSP solar projects and gen-tie projects shall include the specified safety protocols to ensure safety of workers and integrity of the pipelines and transmission lines during work within the easements.
WSP Gen-Tie Corridors. **C**onstruction activity in the vicinity of the existing natural gas pipelines and electrical transmission lines crossing the WSP gen-tie corridors are subject to safety hazards associated with those facilities. **(*Less-than-Significant Impact with Mitigation*)**	Implement MM HAZ-5.

TABLE ES-1 (CONT'D)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.7. HAZARDS AND HAZARDOUS MATERIALS (CONT'D)	
HAZ-6. Electromagnetic Fields (EMFs) from Electrical Facilities	
Westlands Solar Park. There is a potential that workers in the vicinity of the existing PG&E transmission lines and the planned internal gen-tie lines and substations within the WSP plan area would be exposed to Electromagnetic Fields (EMFs) emitted by those facilities. However, the work in the vicinity of the existing transmission lines would be relatively short in duration, and the planned WSP gen-tie lines and substation facilities are planned to be routed and located where the nearest residents and workers would be exposed to long-term EMF levels that are at or near ambient or background levels. **(*Less-than-Significant Impact*)**	No mitigation is required.
WSP Gen-Tie Corridors. There is a potential that residents and workers in the vicinity of WSP gen-tie lines would be exposed to EMFs emitted by those facilities. However, the gen-tie lines are planned to be routed where the nearest residents would be exposed to long-term EMF levels that are equivalent to or less than ambient or background levels. Worker exposure would be relatively short in duration and would be reduced by implementation of CPUC requirements for EMF reduction on transmission lines. **(*Less-than-Significant Impact*)**	No mitigation is required.
HAZ-7. Hazards or Hazardous Materials within ¼ Mile of Schools	
Westlands Solar Park. There are no existing or proposed schools within ¼ mile of the WSP plan area. Therefore, WSP solar development would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. **(*Less-than-Significant Impact*)**	No mitigation is required.
WSP Gen-Tie Corridors. There are no existing schools within ¼ mile of the gen-tie corridors. Therefore, gen-tie lines would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. **(*Less-than-Significant Impact*)**	No mitigation is required.

TABLE ES-1 (CONT'D)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.7. HAZARDS AND HAZARDOUS MATERIALS (CONT'D)	
HAZ-8. Any Listed Hazardous Materials Sites on or Near Project Site	
Westlands Solar Park. There are no hazardous materials sites within the WSP plan area or adjacent properties listed on the Department of Toxic Substances Control's (DTSC's) Hazardous Waste and Substances Site List (Cortese List) compiled pursuant to Government Code Section 65962.5. **(*Less-than-Significant Impact*)**	No mitigation is required.
WSP Gen-Tie Corridors. There are no hazardous materials sites within the WSP gen-tie corridors or adjacent properties listed on the Department of Toxic Substances Control's (DTSC's) Hazardous Waste and Substances Site List (Cortese List) compiled pursuant to Government Code Section 65962.5. **(*Less-than-Significant Impact*)**	No mitigation is required.
HAZ-9. Hazards to Aviation due to Physical Features and Reflective Surfaces	
Westlands Solar Park. There is a potential for tall physical features to pose a hazard to aircraft operation due to physical obstruction; however, no structures within the WSP solar projects would be high enough to present a physical obstruction to aviation. The glare from reflective surfaces can be a hazard to aviation; however, the solar PV modules are dark in color and have low reflectivity. **(*Less-than-Significant Impact*)**	No mitigation is required.
WSP Gen-Tie Corridors. There is a potential for tall physical features to pose a hazard to aircraft operation due to physical obstruction; however, no gen-tie structures would be high enough to present a physical obstruction to aviation. Hazards to crop dusters would be minimized by routing the gen-tie lines adjacent to existing transmission lines and County roads. **(*Less-than-Significant Impact*)**	No mitigation is required.
HAZ-10. Impair or Interfere with Emergency Response or Evacuation Plan	
Westlands Solar Park. The WSP solar development would not alter the local roadway network or generate substantial traffic; therefore, the WSP solar development would not impair or interfere with an emergency response plan or an evacuation plan. **(*Less-than-Significant Impact*)**	No mitigation is required.

TABLE ES-1 (CONT'D)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.7. HAZARDS AND HAZARDOUS MATERIALS (CONT'D)	
HAZ-10. Impair or Interfere with Emergency Response or Evacuation Plan (Cont'd)	
WSP Gen-Tie Corridors. The gen-tie projects would not alter the local roadway network or generate substantial traffic; therefore, the gen-tie projects would not impair or interfere with an emergency response plan or an evacuation plan. **(*Less-than-Significant Impact*)**	No mitigation is required.
HAZ-11. Wildfire Risk	
Westlands Solar Park. The WSP plan area is not located within or near a wildland fire hazard area. Therefore, WSP solar facilities would not be subject to risk from wildland fires. **(*Less-than-Significant Impact*)**	No mitigation is required.
WSP Gen-Tie Corridors. The northern WSP gen-tie project would be subject to moderate wildland fire risk in a small area where it crosses the California Aqueduct. **(*Less-than-Significant Impact with Mitigation*)**	Implement MM HAZ-6. No mitigation is required. **MM HAZ-6. Fire Protection and Safety Plan** The gen-tie project proponent shall prepare a fire protection and safety plan to be implemented during all construction activities associated with the north gen-tie project. The plan shall be prepared in coordination with CalFire and the affected county(s), as applicable.
HAZ-12. Cumulative Hazards and Hazardous Materials Impacts	
Westlands Solar Park. The potential hazards and hazardous materials impacts associated with WSP solar development would be avoided or mitigated, or would be less than significant without mitigation, depending on the specific hazard. It is expected that any potential hazards and hazardous materials associated with other cumulative project sites would be similarly avoided or mitigated, or would be less than significant without mitigation. **(*Less-than-Significant Cumulative Impact with Mitigation*)**	Implement MM HAZ-1 through HAZ-5. No additional mitigation is required.
WSP Gen-Tie Corridors. The potential hazards and hazardous materials impacts associated with the gen-tie projects would be avoided or mitigated, or would be less than significant without mitigation, depending on the specific hazard. It is expected that any potential hazards and hazardous materials associated with other cumulative project sites would be similarly avoided or mitigated, or would be less than significant without mitigation. **(*Less-than-Significant Cumulative Impact with Mitigation*)**	Implement MM HAZ-1 through HAZ-6. No additional mitigation is required.

TABLE ES-1 (CONT'D)

SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.8. HYDROLOGY AND WATER QUALITY	
HYD-1. Violate Water Quality Standards or Waste Discharge Permits	
Westlands Solar Park. The development of solar generating facilities within WSP would not violate any water quality standards or waste discharge requirements. **(*No Impact*)**	No mitigation is required.
WSP Gen-Tie Corridors. Construction of the gen-tie projects would not violate any water quality standards or waste discharge requirements. **(*No Impact*)**	No mitigation is required.
HYD-2. Effects on Groundwater Use and Recharge	
Westlands Solar Park. WSP solar development would result in a substantial reduction in net groundwater use compared to the existing agricultural uses, and would not interfere with groundwater recharge. WSP solar development would reduce the overall volume of groundwater pumped in the plan area which would help offset the decline of groundwater levels in the basin. **(*Less-than-Significant Impact*)**	No mitigation is required.
WSP Gen-Tie Corridors. Construction and operation of the gen-tie projects would require the use of small volumes of water, which would have little or no effect on groundwater supplies. The very small amount of impervious surfaces resulting from the gen-tie projects would not interfere with groundwater recharge. **(*Less-than-Significant Impact*)**	No mitigation is required.
HYD-3. Alteration of Drainage Patterns, Erosion or Sedimentation	
Westlands Solar Park. The WSP solar projects would result in potential water quality impacts from erosion and sedimentation during the construction and decommissioning phases. **(*Less-than-Significant Impact with Mitigation*)**	Implement MM HYD-1. **MM HYD-1. Stormwater Quality Protection** Prior to construction grading and prior to the decommissioning, the applicant shall be required to file a "Notice of Intent" (NOI) with the SWRCB to comply with the General Permit and prepare a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP for each project phase shall be prepared by a licensed engineer and shall detail the treatment measures and best management practices (BMPs) to control pollutants that shall be implemented and complied with during the construction and post-construction phases of solar development. The SWPPP(s) required for decommissioning shall specify BMPs to be implemented during that final project phase. The construction contracts for each project phase, and for the decommissioning phase, shall include the requirement to implement the BMPs in accordance with the SWPPPs.

TABLE ES-1 (CONT'D)

SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.8. HYDROLOGY AND WATER QUALITY (CONT'D)	
HYD-3. Alteration of Drainage Patterns, Erosion or Sedimentations (Cont'd)	
WSP Gen-Tie Corridors. The construction of the gen-tie projects would result in potential water quality impacts from erosion and sedimentation during the construction. **(*Less-than-Significant Impact with Mitigation*)**	Implement MM HYD-1.
HYD-4. Drainage and Flooding	
Westlands Solar Park. The WSP solar projects would result in a slight increase stormwater runoff compared to existing conditions; however, stormwater runoff would be controlled and retained within each solar project site, and flooding would be avoided. **(*Less-than-Significant Impact*)**	No mitigation is required.
WSP Gen-Tie Corridors. The gen-tie projects would result in a slight increase stormwater runoff compared to existing conditions; however, stormwater runoff would be controlled within each disturbance area, and flooding would be avoided. **(*Less-than-Significant Impact*)**	No mitigation is required.
HYD-5. Operations-Related Impacts to Water Quality	
Westlands Solar Park. The WSP solar facilities would generate minimal stormwater pollutants, and would result in little or no stormwater runoff; therefore, the operation of WSP solar facilities would not adversely affect water quality. **(*Less-than-Significant Impact*)**	No mitigation is required.
WSP Gen-Tie Corridors. The gen-tie projects would generate minimal stormwater pollutants, and would result in little or no stormwater runoff; therefore, the operation of the gen-tie lines would not adversely affect water quality. **(*Less-than-Significant Impact*)**	No mitigation is required.
HYD-6. Other Impacts to Water Quality	
Westlands Solar Park. The WSP solar projects would result in potential water quality impacts related to discharges of hazardous materials during construction and decommissioning. **(*Less-than-Significant Impact with Mitigation*)**	Implement MM HYD-1. No additional mitigation is required.
WSP Gen-Tie Corridors. The gen-tie projects would result in potential water quality impacts related to discharges of hazardous materials during construction. **(*Less-than-Significant Impact with Mitigation*)**	Implement MM HYD-1. No additional mitigation is required.

TABLE ES-1 (CONT'D)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.8. HYDROLOGY AND WATER QUALITY (CONT'D)	
HYD-7. Impacts to Development with 100-year Floodplain	
Westlands Solar Park. During the 100-year storm event, small portions of the WSP plan area may be subject to minor flooding; however, any building and equipment pads in these areas would be raised above surrounding ground elevations to prevent flooding damage to such structures. **(*Less-than-Significant Impact*)**	No mitigation is required.
WSP Gen-Tie Corridors. In areas where the gen-tie corridors cross mapped flood zones, transmission towers would be placed to avoid flood zones, or where avoidance is not possible, tower structures would be designed to withstand flood flows. **(*Less-than-Significant Impact*)**	No mitigation is required.
HYD-8. Impede or Redirect Flood Flows	
Westlands Solar Park. No lands within the WSP plan area are mapped within the 100-year flood zone or the 500-year flood zone, per FEMA's regulatory flood zone mapping. In the small areas of the WSP plan area that are mapped as flood-prone by DWR, the solar facilities would be raised above flood-elevations and thus not impede or redirect flood flows. **(*Less-than-Significant Impact*)**	No mitigation is required.
WSP Gen-Tie Corridors. The placement of some transmission towers within 100-year flood zones is unavoidable; however, the relatively small concrete footings of the intermittently spaced tower structures would not impede or redirect flood flows. **(*Less-than-Significant Impact*)**	No mitigation is required.
HYD-9. Inundation Potential Due to Dam Failure	
Westlands Solar Park. In the event of failure of large dams in the Sierra Nevada, the potential inundation areas would extend into the eastern areas of Kings County, but would not extend to the WSP plan area. **(*Less-than-Significant Impact*)**	No mitigation is required.
WSP Gen-Tie Corridors. In the event of failure of large dams in the Sierra Nevada, the potential inundation areas would extend into the eastern areas of Kings County, but would not extend to the gen-tie corridors area. **(*Less-than-Significant Impact*)**	No mitigation is required.
HYD-10. Inundation by Seiche, Tsunami, or Mudflow	
Westlands Solar Park. The WSP plan area is located substantial distances from areas subject to potential flood hazards from catastrophic events such as seiches, tsunamis, or mudflows; therefore, WSP solar development would not be subject to flooding risks from these sources. **(*Less-than-Significant Impact*)**	No mitigation is required.

TABLE ES-1 (CONT'D)

SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.8. HYDROLOGY AND WATER QUALITY (CONT'D)	
HYD-10. Inundation by Seiche, Tsunami, or Mudflow (Cont'd)	
WSP Gen-Tie Corridors. The gen-tie corridors are located substantial distances from areas subject to potential flood hazards from catastrophic events such as seiches, tsunamis, or mudflows; therefore, the gen-tie facilities would not be subject to flooding risks from these sources. **(*Less-than-Significant Impact*)**	No mitigation is required.
HYD-11. Cumulative Hydrology and Water Quality Impacts	
Westlands Solar Park. The potential cumulative drainage, flooding, water quality, and groundwater impacts resulting from WSP solar development, combined with impacts from related cumulative projects, would be less than cumulatively significant under near-term and far-term conditions, with mitigation. **(*Less-than-Significant Cumulative Impact with Mitigation*)**	Implement MM HYD-1. No additional mitigation is required.
WSP Gen-Tie Corridors. The potential cumulative drainage, flooding, water quality, and groundwater impacts resulting from the gen-tie projects, combined with impacts from related cumulative projects, would be less than cumulatively significant under near-term and far-term conditions, with mitigation. **(*Less-than-Significant Cumulative Impact with Mitigation*)**	Implement MM HYD-1. No additional mitigation is required.
3.9. LAND USE AND PLANNING	
LU-1. Physically Divide an Established Community	
Westlands Solar Park. The WSP plan area is not located within or near any established community; therefore, WSP solar development would not physically divide an established community. **(*No Impact*)**	No mitigation is required.
WSP Gen-Tie Corridors. The lands traversed by the gen-tie corridors consist entirely of rural lands and include no established communities; therefore, the gen-tie projects would not physically divide an established community. **(*No Impact*)**	No mitigation is required.
LU-2. Conflict with Applicable Land Use Plan, Policy, or Regulation	
Westlands Solar Park. The WSP solar development is consistent with applicable Kings County General Plan designations and policies, and zoning regulations; therefore, the WSP solar development would not conflict with an applicable land use plan, policy, or regulation. **(*No Impact*)**	No mitigation is required.

TABLE ES-1 (CONT'D)

SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.9. LAND USE AND PLANNING (CONT'D)	
LU-2. Conflict with Applicable Land Use Plan, Policy, or Regulation (Cont'd)	
WSP Gen-Tie Corridors. The gen-tie projects are consistent with applicable General Plan designations and policies, and zoning regulations of Kings and Fresno Counties; therefore, the gen-tie projects would not conflict with an applicable land use plan, policy, or regulation. **(*No Impact*)**	No mitigation is required.
LU-3. Results in Conflicts or Incompatibility with Existing Land Uses	
Westlands Solar Park. The WSP solar development would occur within the flight operations area of NAS Lemoore, and would occur in proximity to existing residences; however, WSP solar development would not result in significant conflicts or incompatibility with these activities and land uses. The WSP solar development may adversely affect nearby agricultural operations through increased dust generation during construction, and through potential introduction of weedy species during operation. **(*Less-than-Significant Impact with Mitigation*)**	Implement MM AQ-1 (Dust Control) and MM AG-1 (Agricultural Management Plan).
WSP Gen-Tie Corridors. The gen-tie projects would occur in proximity to existing agricultural operations and existing residences; however, WSP solar development would not result in significant conflicts or incompatibility with existing residences. However, the construction of the gen-tie lines would result in the permanent loss of farmland, possible destruction of existing crops and damage to farming infrastructure, as well as restricted access to farmlands during construction. **(*Less-than-Significant Impact with Mitigation*)**	Implement MM AG-4 (Mitigation for Permanent Impacts to Agricultural Operations) and MM AG-5 (Mitigation for Temporary Impacts to Agricultural Operations).
LU-4. Conflict with a Habitat Conservation Plan or a Natural Communities Conservation Plan	
Westlands Solar Park. The WSP solar development would not conflict with an adopted habitat conservation plan, a natural community conservation plan, or any other approved local, regional or state habitat conservation plan. **(*No Impact*)**	No mitigation is required.
WSP Gen-Tie Corridors. The gen-tie projects would not conflict with an adopted habitat conservation plan, a natural community conservation plan, or any other approved local, regional or state habitat conservation plan. **(*No Impact*)**	No mitigation is required.
LU-5. Cumulative Land Use and Planning Impacts	
Westlands Solar Park. The potential land use impacts associated with the WSP solar development, combined with the land use impacts of other cumulative development, would be less than significant with mitigation. **(*Less-than-Significant Impact with Mitigation*)**	Implement MMs AQ-1 (Dust Control), AG-1 (Agricultural Management Plan), AG-2 (Soil Reclamation Plan), and AG-3 (Financial Assurance). No additional mitigation is required.

TABLE ES-1 (CONT'D)

SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.9. LAND USE AND PLANNING (CONT'D)	
LU-5. Cumulative Land Use and Planning Impacts (Cont'd)	
WSP Gen-Tie Corridors. The potential land use and planning impacts associated with the gen-tie projects, combined with the land use impacts of other cumulative development, would be less than significant with mitigation. **(*Less-than-Significant Impact with Mitigation*)**	Implement MMs AQ-1 (Dust Control), AG-4 (Mitigation for Permanent Impacts to Agricultural Operations), and AG-5 (Mitigation for Temporary Impacts to Agricultural Operations). No additional mitigation is required.
3.10. NOISE	
NOI-1. Noise from Conventional Construction Activities	
Westlands Solar Park. Noise levels would be temporarily elevated during construction activities associated with WSP solar development. **(*Less-than-Significant Impact*)**	No mitigation is required.
WSP Gen-Tie Corridors. Noise levels would be temporarily elevated during construction activities associated with the gen-tie projects. **(*Less-than-Significant Impact*)**	No mitigation is required.
NOI-2. Noise from Helicopter Construction	
Westlands Solar Park. No helicopter construction is anticipated within the WSP plan area; therefore, no noise impacts would occur as a result of helicopter use. **(*No Impact*)**	No mitigation is required.
WSP Gen-Tie Corridors. If helicopter construction is employed for gen-tie line construction at road crossings or creek crossings, temporary increases in noise levels at sensitive receiver locations may result. **(*Less-than-Significant Impact*)**	No mitigation is required.
NOI-3. Construction Traffic Noise	
Westlands Solar Park. Construction of the WSP solar projects would result in temporary increases in traffic noise, generated by delivery trucks and construction worker trips, along roadways providing access to the WSP plan area. **(*No Impact*)**	No mitigation is required.
WSP Gen-Tie Corridors. Construction of the gen-tie projects would result in temporary increases in traffic noise, generated by delivery trucks and construction worker trips, along roadways providing access to the gen-tie work sites. **(*Less-than-Significant Impact*)**	No mitigation is required.

TABLE ES-1 (CONT'D)

SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.10. NOISE (CONT'D)	
NOI-4. Vibration from Conventional Construction Activities	
Westlands Solar Park. Construction of the WSP solar facilities would involve the use of heavy equipment and vehicles that would produce vibration; however, the vibration levels would be too low to result in potential damage to buildings or potential annoyance to sensitive receivers. **(*Less-than-Significant Impact*)**	No mitigation is required.
WSP Gen-Tie Corridors. Construction of the gen-tie projects would involve the use of heavy equipment and vehicles that would produce vibration; however, the vibration levels would be too low to result in potential damage to buildings or potential annoyance to sensitive receivers. **(*Less-than-Significant Impact*)**	No mitigation is required.
NOI-5. Noise from Project Operations	
Westlands Solar Park. Noise generated by operation of WSP solar facilities would result in a small increase noise levels in the vicinity. **(*Less-than-Significant Impact*)**	No mitigation is required.
WSP Gen-Tie Corridors. Noise generated by operation of gen-tie lines would result in a small increase noise levels in the vicinity. **(*Less-than-Significant Impact*)**	No mitigation is required.
NOI-6. Off-Site Traffic Noise from Project Operations	
Westlands Solar Park. Traffic generated by the operation of the WSP solar facilities would result in a small increase in traffic along roadways in the vicinity. **(*Less-than-Significant Impact*)**	No mitigation is required.
WSP Gen-Tie Corridors. Traffic generated by the operation of the WSP gen-tie facilities would result in a small increase in traffic along roadways in the vicinity. **(*Less-than-Significant Impact*)**	No mitigation is required.
NOI-7. Audible Noise from Corona Discharge on Transmission Lines	
Westlands Solar Park. During wet conditions, corona discharge from transmission conductors within the WSP plan area would generate noise. **(*Less-than-Significant Impact*)**	No mitigation is required.
WSP Gen-Tie Corridors. During wet conditions, corona discharge from conductors in the gen-tie facilities would generate noise. **(*Less-than-Significant Impact*)**	No mitigation is required.

TABLE ES-1 (CONT'D)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.10. NOISE (CONT'D)	
NOI-8. Substation and Switching Station Noise	
Westlands Solar Park. Equipment noise from operation of new substations and switching stations within the WSP plan area would result in small increases in noise levels in the vicinity. **(*Less-than-Significant Impact*)**	No mitigation is required.
WSP Gen-Tie Corridors. Equipment noise from operation of substation upgrades associated with the gen-tie lines would result in small increases in noise levels in the vicinity. **(*Less-than-Significant Impact*)**	No mitigation is required.
NOI-9. Noise from Decommissioning of Solar Facilities	
Westlands Solar Park. Noise levels would be temporarily elevated during deconstruction activities associated with solar facility decommissioning within the WSP plan area. **(*Less-than-Significant Impact*)**	No mitigation is required.
WSP Gen-Tie Corridors. Decommissioning of gen-tie facilities is not anticipated; therefore, no noise impacts would occur. **(*No Impact*)**	No mitigation is required.
NOI-10. Noise from Flight Operations Associated with Nearby Airports	
Westlands Solar Park. The workers within the WSP plan area would not be exposed to excessive noise levels from flight operations associated with public or public use airports, NAS Lemoore, or private airstrips in the vicinity. **(*Less-than-Significant Impact*)**	No mitigation is required.
WSP Gen-Tie Corridors. The workers on the gen-tie projects would not be exposed to excessive noise levels from flight operations associated with public or public use airports, NAS Lemoore, or private airstrips in the vicinity. **(*Less-than-Significant Impact*)**	No mitigation is required.
NOI-11. Cumulative Noise Impacts	
Westlands Solar Park. The noise generated by WSP solar projects, along with noise from other cumulative projects, would combine to result in a small increase in noise levels in the area. **(*Less-than-Significant Cumulative Impact*)**	No mitigation is required.
WSP Gen-Tie Corridors. The noise generated by gen-tie projects, along with noise from other cumulative projects, would combine to result in a small increase in noise levels in the area. **(*Less-than-Significant Cumulative Impact*)**	No mitigation is required.

TABLE ES-1 (CONT'D)

SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.11. PALEONTOLOGICAL RESOURCES	
PALEO-1. Loss of Paleontological Resources	
Westlands Solar Park. The WSP plan area includes approximately 2,100 acres that are underlain at depth by geologic units that have a high potential for paleontological resources. The construction of solar generating facilities on these lands could potentially result in the destruction of paleontological resources. **(*Less-than-Significant Impact with Mitigation*)**	Implement MM Paleo-1. **(*Significance after Mitigation: Less than significant*)**
WSP Gen-Tie Corridors. The planned transmission corridors are underlain at depth by geologic units that have a high potential for paleontological resources. The construction of transmission towers and related gen-tie facilities could potentially result in the destruction of paleontological resources. **(*Less-than-Significant Impact with Mitigation*)**	Implement MM Paleo-1. **MM PALEO-1: Protection of Paleontological Resources** In order to reduce the potential impacts to paleontological resources to less-than-significant levels, the following mitigation measures shall be implemented in conjunction with all ground disturbance and construction work. a. Workers Environmental Awareness Training. Prior to any ground-disturbing activities, all field personnel shall receive a worker's environmental awareness training module on paleontological resources. The training shall provide a description of the fossil resources that may be encountered in the project area, outline steps to follow in the event that a fossil discovery is made, and provide contact information for the Project Paleontologist and on-site monitor(s). The training shall be developed by the Project Paleontologist and may be conducted concurrent with other environmental training (e.g., cultural and natural resources awareness training, safety training, etc.). b. Prepare Paleontological Resource Management Plan (RPMP). Prior to the commencement of ground-disturbing activities, a qualified and professional paleontologist shall be retained to prepare and implement a PRMP for the project. The PRMP shall describe mitigation recommendations in detail, including field reconnaissance methodology; paleontological monitoring procedures; communication protocols to be followed in the event that an unanticipated fossil discovery is made during project development; and preparation, curation, and reporting requirements. The PRMP shall include the mitigation procedures described below. [*Continued on next page*.]

TABLE ES-1 (CONT'D)

SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.11. PALEONTOLOGICAL RESOURCES (CONT'D)	
PALEO-1. Loss of Paleontological Resources (Cont'd)	
WSP Gen-Tie Corridors **(Cont'd)**	[*Continued from preceding page*.] a. Paleontological Reconnaissance Survey. A qualified paleontologist shall be retained to conduct a field reconnaissance survey of the project area prior to any ground-disturbing activities. The purpose of the field survey will be to inspect the ground surface visually for exposed fossils or traces thereof and to further evaluate geologic exposures for their potential to contain preserved fossil material at the subsurface. The field survey shall be limited to project areas underlain by geologic units with a high paleontological sensitivity (e.g., Quaternary older alluvium [Qc] and lacustrine deposits [Ql]). At the discretion of the Project Paleontologist, the survey may extend to those areas where highly sensitive units are likely to be shallowly buried by younger deposits (e.g., Quaternary alluvium [Qa]). However, in general, project areas underlain by geologic units with low sensitivity shall not be subject to the survey. Particular attention shall be paid to rock outcrops, both inside and in the vicinity of the project area, and any areas where geologic sediments are well exposed. Areas determined to be heavily disturbed or otherwise obscured by heavy vegetation, agriculture, or buildings, etc., will not require a ground reconnaissance survey and may be subject to a windshield survey. d. Document All Finds. All fossil occurrences observed during the course of fieldwork, significant or not, shall be adequately documented and recorded at the time of discovery. The data collected for each fossil occurrence shall include, at minimum, the following information: Universal Transverse Mercator (UTM) coordinates, approximate elevation, description of taxa, lithologic description, and stratigraphic context (if known). In addition, each locality shall be photographically documented with a digital camera. If feasible, with prior consent of the landowner(s), all significant or potentially significant fossils shall be collected at the time they are observed in the field. If left exposed to the elements, fossil materials are subject to erosion and weathering. If the fossil discovery is too large to collect during the survey (e.g., a mammoth skeleton or bone bed) and requires a large-scale salvage effort, then it will be documented and a recovery strategy will be devised pursuant to Society of Vertebrate Paleontology (2010) guidelines. [*Continued on next page*.]

TABLE ES-1 (CONT'D)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.11. PALEONTOLOGICAL RESOURCES (CONT'D)	
PALEO-1. Loss of Paleontological Resources (Cont'd)	
WSP Gen-Tie Corridors **(Cont'd)**	[*Continued from preceding page*.] a. Conduct Paleontological Monitoring. Monitoring entails the visual inspection of excavated or graded areas and trench sidewalls for evidence of fossils. Full-time monitoring shall be required during ground-disturbing activities in the portions of any project that are underlain by geologic units with high sensitivity for paleontological resources (e.g., Quaternary older alluvium [Qc] and lacustrine deposits [Ql]). At the discretion of the Project Paleontologist, the survey may extend to those areas where highly sensitive units are likely to be shallowly buried by younger Quaternary alluvium deposits (e.g., Qf, Qa, Qb), in order to determine if underlying sensitive geologic units are being impacted by construction, and at what depth. In the event that a paleontological resource is discovered, the monitor shall have the authority to divert the construction equipment around the find temporarily until it is assessed for scientific significance and collected. Monitoring efforts can be reduced or eliminated at the discretion of the Project Paleontologist if no fossil resources are encountered after 50 percent of the excavations are completed. Monitoring is largely a visual inspection of sediments; therefore, the most likely fossils to be observed will be macrofossils of vertebrates (bones, teeth, tusk) or invertebrates (shells). At the discretion of the Project Paleontologist, the monitor shall periodically screen sediments to check for the presence of microfossils that can be seen with the aid of a hand lens (i.e., microvertebrates). Should microvertebrate fossils be encountered during the screening process, then bulk matrix samples will be taken for processing off site. For each fossiliferous horizon or paleosol, a standard sample (4.0 cubic yards or 6,000 pounds) shall be collected for subsequent wet screening per Society of Vertebrate Paleontology (2010) guidelines. b. Procedures for Fossil Preparation, Curation, and Reporting. Upon completion of fieldwork, all significant fossils collected shall be prepared in a properly equipped paleontology laboratory to a point ready for curation. Preparation shall include the careful removal of excess matrix from fossil materials and stabilizing and repairing specimens, as necessary. Following laboratory work, all fossil specimens shall be identified to the lowest taxonomic level possible, cataloged, analyzed, and delivered to an accredited museum repository for permanent curation and storage. The cost of curation is assessed by the repository and is the responsibility of the project proponent. [*Continued on next page*.]

TABLE ES-1 (CONT'D)

SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.11. PALEONTOLOGICAL RESOURCES (CONT'D)	
PALEO-1. Loss of Paleontological Resources (Cont'd)	
WSP Gen-Tie Corridors **(Cont'd)**	[*Continued from preceding page*.] At the conclusion of laboratory work and museum curation, a Paleontological Mitigation Report shall be prepared describing the results of the paleontological mitigation monitoring efforts associated with the project. The report shall include a summary of the field and laboratory methods, an overview of the project area geology and paleontology, a list of taxa recovered (if any), an analysis of fossils recovered (if any) and their scientific significance, the signed receipt of confirmation of museum deposition, and recommendations. The report shall be submitted to the designated museum repository, the project proponent, and other interested state and/or federal agencies involved within 45 days following completion of the monitoring and laboratory work.
PALEO-2. Cumulative Impacts to Paleontological Resources	
Westlands Solar Park. The WSP solar development would not make a cumulatively considerable contribution to paleontological resource impacts with mitigation; therefore, the WSP solar projects would not have a significant cumulative impact on paleontological resources with mitigation. **(*Less-than-Significant Cumulative Impact with Mitigation*)**	Implement MM Paleo-1. No additional mitigation is required.
WSP Gen-Tie Corridors. The gen-tie projects would not make a cumulatively considerable contribution to paleontological resource impacts with mitigation; therefore, the transmission projects would not have a significant cumulative impact on paleontological resources with mitigation**. (*Less-than-Significant Cumulative Impact with Mitigation*)**	Implement MM Paleo-1. No additional mitigation is required.

TABLE ES-1 (CONT'D)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.12. PUBLIC SERVICES	
PS-1. Fire Protection Services	
Westlands Solar Park. The WSP solar projects would result in an incremental increase in demand for fire protection services; however, these increases are expected to be small and thus would not result in degradation of service levels or in the need for new or expanded facilities. **(*No Impact*)**	No mitigation is required.
WSP Gen-Tie Corridors. The gen-tie projects would result in an incremental increase in demand for fire protection services; however, these increases are expected to be small and thus would not result in degradation of service levels or in the need for new or expanded facilities. **(*No Impact*)**	No mitigation is required.
PS-2. Law Enforcement and Security	
Westlands Solar Park. The WSP solar projects would result in a small increase the demand for law enforcement services, and therefore would not degrade service levels or result in the need for new or altered law enforcement facilities. **(*No Impact*)**	No mitigation is required.
WSP Gen-Tie Corridors. The gen-tie projects would result in a small increase the demand for law enforcement services, and therefore would not degrade service levels or result in the need for new or altered law enforcement facilities. **(*No Impact*)**	No mitigation is required.
PS-3. Schools, Parks, and Other Public Facilities	
Westlands Solar Park. The WSP solar projects would result in no demand for schools, parks, or other public facilities; therefore, WSP solar development would have no impact on such public facilities. **(*No Impact*)**	No mitigation is required.
WSP Gen-Tie Corridors. The gen-tie projects would result in no demand for schools, parks, or other public facilities; therefore, the WSP gen-tie projects would have no impact on such public facilities. **(*No Impact*)**	No mitigation is required.

TABLE ES-1 (CONT'D)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.12. PUBLIC SERVICES (CONT'D)	
PS-4. Cumulative Public Services Impacts	
Westlands Solar Park. The WSP solar projects, combined with other related cumulative projects, would generate small increases in demands for fire protection, law enforcement, and other public services; however, these small increases in service demand are not expected to require additional staff and equipment, or the construction of new or expanded facilities. **(*No Cumulative Impact*)**	No mitigation is required.
WSP Gen-Tie Corridors. The WSP gen-tie projects, combined with other related cumulative projects, would generate small increases in demands for fire protection, law enforcement, and other public services; however, these small increases in service demand are not expected to require additional staff and equipment, or the construction of new or expanded facilities. **(*No Cumulative Impact*)**	No mitigation is required.
3.13. TRANSPORTATION/TRAFFIC	
TR-1. Conflict with Transportation Plan or Level of Service Policy	
Westlands Solar Park. The WSP solar facilities would increase traffic during construction and operation; however, the traffic volumes would not result in exceedance of applicable policies establishing acceptable levels of service or measures of effectiveness. **(*Less-than-Significant Impact*)**	No mitigation is required.
WSP Gen-Tie Corridors. The gen-tie projects would increase traffic during construction and operation; however, the traffic volumes would not result in exceedance of applicable levels of service standards or measures of effectiveness. **(*Less-than-Significant Impact*)**	No mitigation is required.
TR-2. Conflict with Congestion Management Program	
Westlands Solar Park. The WSP solar projects would not conflict with any standards established by an applicable congestion management agency. **(*Less-than-Significant Impact*)**	No mitigation is required.
WSP Gen-Tie Corridors. The gen-tie projects would not conflict with any standards established by an applicable congestion management agency. **(*Less-than-Significant Impact*)**	No mitigation is required.

TABLE ES-1 (CONT'D)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.13. TRANSPORTATION/TRAFFIC (CONT'D)	
TR-3. Change in Air Traffic Patterns or Levels, or Increase Safety Risks	
Westlands Solar Park. The WSP solar projects are not expected to involve any helicopter use during construction and operation, and would not change air traffic patterns, increase air traffic levels, or otherwise result in substantial safety risks related to aviation. **(*No Impact*)**	No mitigation is required.
WSP Gen-Tie Corridors. The WSP gen-tie projects may make intermittent use of helicopters during construction and operation, and would not change air traffic patterns, increase air traffic levels, or otherwise result in substantial safety risks related to aviation. Hazards to crop dusters would be minimized by routing the gen-tie lines adjacent to existing transmission and roadway corridors. **(*Less-than-Significant Impact*)**	No mitigation is required.
TR-4. Increased Traffic Hazards	
Westlands Solar Park. During construction of WSP solar projects, slow moving trucks and slow turning movements by large equipment and material delivery trucks could pose a traffic safety hazard along the affected roadways. **(*Less-than-Significant Impact with Mitigation*)**	Implement MM TR 1a. **MM TR-1a: Traffic Safety Measures for WSP Solar Projects** As a condition of project approval, and prior to the issuance of encroachment permits, the project sponsor shall consult with the Kings County Public Works Department prior to initiation of construction and decommissioning activities that may affect area traffic (such as equipment and supply delivery necessitating lane closures, trenching, etc.) and shall implement appropriate traffic controls in accordance with the California Vehicle Code and other state and local requirements to avoid or minimize impacts on traffic. Traffic measures that shall be implemented during construction and decommissioning activities include the following: a. Construction traffic shall not block emergency equipment routes. b. Construction activities shall be designed to minimize work on, and use of, local streets. As examples, this might include the following: i. Identify designated off-street parking areas for construction-related vehicles throughout the construction and decommissioning periods. ii. Identify approved truck routes for the delivery of all construction-related equipment and materials. [*Continued on next page*.]

TABLE ES-1 (CONT'D)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.13. TRANSPORTATION/TRAFFIC (CONT'D)	
TR-4. Increased Traffic Hazards	
Westlands Solar Park **(Cont'd)**	[*Continued from preceding page*.] iii. Limit the employee arrivals and departures, and the delivery of equipment and materials, to non-peak traffic periods (e.g., avoid unnecessary travel from 7 to 9 AM and 4 to 6 PM). iv. Provide for farm worker vehicle access and safe pedestrian and vehicle access. v. Provide advance warning and appropriate signage whenever road closures or detours are necessary. c. Construction shall comply with San Joaquin Valley Air Pollution Control District standards for unpaved roads, which include a requirement to keep vehicle speeds below 15 miles per hour and to have fewer than 150 trips per day per unpaved road. The details of the traffic safety mitigations will be determined by the County Public Works Department at such time as the activities for which they are required are scheduled and the applicant's construction contractor requests consultation regarding such activities.
WSP Gen-Tie Corridors. During construction of the gen-tie projects, slow moving trucks and slow turning movements by large equipment and material delivery trucks could pose a traffic safety hazard along the affected roadways. **(*Less-than-Significant Impact with Mitigation*)**	Implement MM TR-1b. **MM TR-1b: Traffic Safety Measures for WSP Gen-Tie Projects** Prior to the start of construction activity on a gen-tie project, the project proponent shall prepare and implement a Traffic Management Plan (TMP). The TMP is to include, but not be limited to, the following provisions: ▪ A description of work hours, designated haul routes, and any timing restrictions on hauling during peak traffic periods. ▪ A description of traffic control measures such as flagging, warning signs, barricades, cones, and detours, including locations and timing of the measures. [*Continued on next page*.]

TABLE ES-1 (CONT'D)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.13. TRANSPORTATION/TRAFFIC (CONT'D)	
TR-4. Increased Traffic Hazards (Cont'd)	
WSP Gen-Tie Corridors **(Cont'd)**	[*Continued from preceding page*.] ▪ A description of the process for providing advance notification to property owners who would be affected by private road closures, temporary installation of guard structures, planned nighttime construction, and other construction activities. The notification would specify the timing and nature of the activity affecting each landowner, and would include contact information for designated construction personnel responsible for public coordination. ▪ A description of emergency services providers in the affected areas, along with provisions for notification of such service providers on the timing, location, and duration of construction activities, especially road closures and detours. The Traffic Management Plans would be subject to review and approval of the various transportation agencies, including Caltrans and Counties of Kings and Fresno, as applicable. These reviews would occur during the course of encroachment permit application processes for their respective roadway facilities. The California Highway Patrol and County Sheriff's Departments would also review the TMPs prior to construction.
TR-5. Emergency Access	
Westlands Solar Park. The WSP solar projects would include traffic controls during construction, and would be designed to allow full emergency access within each completed SGF, such that WSP solar development would not result in inadequate emergency access. **(*Less-than-Significant Impact*)**	No mitigation is required.
WSP Gen-Tie Corridors. The gen-tie projects would include traffic controls during construction, and would be designed to allow full emergency access to the completed gen-tie facilities, such that the gen-tie projects would minimize the potential for inadequate emergency access. **(*Less-than-Significant Impact*)**	No mitigation is required.

TABLE ES-1 (CONT'D)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.13. TRANSPORTATION/TRAFFIC (CONT'D)	
TR-6. Conflict with Plans or Policies for Public Transit, Bicycle, or Pedestrian Facilities	
Westlands Solar Park. The WSP solar development would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. **(*Less-than-Significant Impact*)**	No mitigation is required.
WSP Gen-Tie Corridors. The gen-tie projects would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. **(*Less-than-Significant Impact*)**	No mitigation is required.
TR-7. Cumulative Transportation/Traffic Impacts	
Westlands Solar Park. The traffic generated by WSP solar projects, along with traffic from other cumulative projects, would combine to result in increased traffic volumes on roadways in the area. **(*Less-than-Significant Cumulative Impact*)** During construction and decommissioning, traffic safety hazards may be created by construction vehicles on roadways. **(*Less-than-Significant Cumulative Impact with Mitigation*)**	Implement MM TR-1a. No additional mitigation is required.
WSP Gen-Tie Corridors. The traffic generated by the gen-tie projects, along with traffic from other cumulative projects, would combine to result in in increased traffic volumes on roadways in the area. **(*Less-than-Significant Cumulative Impact*)** During construction and decommissioning, traffic safety hazards may be created by construction vehicles on roadways. **(*Less-than-Significant Cumulative Impact with Mitigation*)**	Implement MM TR-1b. No additional mitigation is required.
3.14. UTILITIES AND SERVICE SYSTEMS	
UTS-1. Water Supply	
Westlands Solar Park. The WSP solar facilities would require water supplies during the construction and operational phases; however, existing water supply sources and infrastructure would be adequate to serve the water demands of the WSP solar facilities without resulting in impacts to surface and groundwater resources, or requiring expansion of water supply facilities or additional water entitlements. **(*Less-than-Significant Impact*)**	No mitigation is required.

TABLE ES-1 (CONT'D)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.14. UTILITIES AND SERVICE SYSTEMS (CONT'D)	
UTS-1. Water Supply (Cont'd)	
WSP Gen-Tie Corridors. The gen-tie projects would require relatively small amounts of water for dust suppression during construction. Existing water supply sources and infrastructure would be adequate to serve the water demands of the gen-tie projects without resulting in impacts to surface and groundwater resources, or requiring expansion of water supply facilities or additional water entitlements. **(*Less-than-Significant Impact*)**	No mitigation is required.
UTS-2. Wastewater Treatment and Disposal	
Westlands Solar Park. The WSP solar facilities would each have septic tanks that would be pumped periodically for off-site disposal at an approved wastewater facility. It is not expected that any WSP solar facility would utilize septic tank and leachfield systems for on-site wastewater treatment and disposal. **(*Less-than-Significant Impact*)**	No mitigation is required.
WSP Gen-Tie Corridors. The wastewater treatment and disposal needs of the gen-tie projects during construction would be provided by portable chemical toilets, and there would be no sanitary facilities required during operation of the gen-tie facilities. Therefore, the impacts of the gen-tie projects in terms of wastewater treatment and disposal would be negligible. **(*Less-than-Significant Impact*)**	No mitigation is required.
UTS-3. Solid Waste Service and Landfill Capacity	
Westlands Solar Park. The WSP solar development would increase the demand for solid waste collection and disposal service; however, the relatively small increase in solid waste generation from the WSP solar projects would not have an adverse effect on the capacity of existing landfill facilities. **(*Less-than-Significant Impact*)**	No mitigation is required.
WSP Gen-Tie Corridors. The gen-tie projects would generate small amounts of solid waste, which would be accommodated by landfills in the vicinity with minimal effects on overall landfill capacity. **(*Less-than-Significant Impact*)**	No mitigation is required.

TABLE ES-1 (CONT'D)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.14. UTILITIES AND SERVICE SYSTEMS (CONT'D)	
UTS-4. Cumulative Utilities and Service Systems	
Westlands Solar Park. The development of the WSP solar facilities combined with other planned and proposed development in the area would require water supplies, wastewater disposal, and solid waste disposal. However, the cumulative impact of these planned and proposed projects upon these utilities and service systems would be less than significant. **(*Less-than-Significant Impact*)**	No mitigation is required.
WSP Gen-Tie Corridors. The construction of the WSP gen-tie projects would generate minimal demand for water supplies, wastewater disposal, and solid waste disposal. Thus, while cumulative impacts to these services from other approved and pending projects may be cumulatively significant, the contribution of the gen-tie projects to any such cumulative impact would be not cumulatively considerable. Therefore, the cumulative impact to utilities and service systems associated with the WSP gen-tie projects would be less than significant. **(*Less-than-Significant Impact*)**	No mitigation is required.

ES.5. SIGNIFICANT UNAVOIDABLE IMPACTS

As discussed throughout Chapter 3 of this EIR, all of the potentially significant impacts associated with the Westlands Solar Park and the WSP Gen-Tie Corridors, at both the project and cumulative levels, would be avoided or reduced to less-than-significant levels through mitigation measures to be implemented in conjunction with these project elements. There are no significant and unavoidable impacts associated with the solar development of the Westlands Solar Park or the construction of the WSP gen-tie lines.

ES.6. ALTERNATIVES TO THE PROPOSED PROJECT

The CEQA Guidelines stipulate that a reasonable range of project alternatives be considered 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. The following alternatives were evaluated for the Westlands Solar Park and WSP Gen-Tie Corridors, respectively

Alternatives to the Westlands Solar Park

1. No Project Alternative
2. Reduced Project Size Alternative
3. Alternative Project Location

Alternatives to the WSP Gen-Tie Corridors

1. No Project Alternative

The evaluation of the project alternatives is summarized below. In each case, this is followed by the identification of the environmentally superior alternative, as required under CEQA. The detail descriptions and evaluations of these alternatives is found in Chapter 5 of this EIR, along with descriptions of alternatives that were considered but not carried forward for detailed analysis.

ES.6.1. ALTERNATIVES TO THE WESTLANDS SOLAR PARK

No Project Alternative

The No Project Alternative consists of not constructing the WSP solar facilities and continuing the farming operations on the WSP plan area without modifications to the site. The No Project Alternative would result in lower levels of impact than WSP solar development in some categories, but would result in greater levels of impact in others. The No Project Alternative would result in relatively lower levels of impact in the categories of aesthetics, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, noise, public services, traffic, wastewater disposal, solid waste disposal, although all of these impacts would be less than significant or fully mitigable with WSP solar development. The No Project Alternative would result in substantially greater levels of impact than WSP solar development in the categories of agricultural resources, greenhouse gas emissions/climate change, and water supply, and similar levels of impact to WSP solar development in terms of air quality and hazards and hazardous materials. On balance, while the No Project Alternative would result in somewhat lower impacts in several categories, it would result in substantially greater impacts in others such as agricultural resources, greenhouse gas emissions, and water supply. Therefore, the No Project Alternative would not represent an environmentally superior alternative to the planned WSP solar development. Moreover, the No Project Alternative would not fulfill any of the project objectives, as restated at the beginning of this chapter, particularly the objectives of helping to meet the state's renewable energy and greenhouse gas reduction targets, retiring all of the physically-impaired lands of the WSP plan area from irrigated agriculture, and maximizing reallocation of scarce imported water resources to more productive agricultural operations.

Reduced Project Size Alternative

This alternative assumes a 30 percent reduction in the size of the WSP plan area, resulting in solar PV development over approximately 14,600 acres with a total generating capacity of about 1,220 MW. The Reduced Project Size Alternative would comprise the eastern and southern areas of the WSP plan area (i.e., Master Plan Subareas 1 through 8 on Figure PD-3). This would include Subareas 1 through 4 located generally north of Nevada Avenue and east of 25th Avenue, and Subareas 5 through 8 located south of Nevada Avenue.

The Reduced Project Size Alternative would result in lower levels of impact than the planned WSP solar development in some categories, but would result in greater levels of impact in others. The Reduced Project Size Alternative would result in relatively lower levels of impact in the categories of aesthetics, biological resources, cultural and paleontological resources, geology and soils, hydrology and water quality, land use and planning, noise, public services, traffic, wastewater disposal, and solid waste disposal, although all of these impacts would be less than significant or fully mitigable under the planned WSP solar development. The Reduced Project Size Alternative would result in greater levels of impact than the planned WSP solar development in the categories of agricultural resources, hazardous materials, greenhouse gas emissions/climate change, and water supply, and similar levels of impact to WSP solar development in terms of air quality, and hazards and hazardous materials. On balance, while the Reduced Project Size Alternative would result in somewhat lower impacts in several categories, it would result in substantially greater impacts in others such as agricultural resources, greenhouse gas emissions/climate, and water supply. In addition, since the planned WSP solar development results in no significant and unavoidable impacts, the Reduced Project Size Alternative would not eliminate or substantially reduce such impacts. Therefore, the Reduced Project Size Alternative would not represent an environmentally superior alternative to the planned WSP solar development. Moreover, the Reduced Project Size Alternative would be significantly less effective in fulfilling the project objectives, as restated at the beginning of this chapter, particularly the objectives of helping to meet the state's renewable energy and greenhouse gas reduction targets, retiring all of the physically-impaired lands of the WSP plan area from irrigated agriculture, and maximizing reallocation of scarce imported water resources to more productive agricultural

operations.

Alternative Project Location

The Alternative Project Site consists of approximately 21,000 contiguous acres of WWD-owned retired farmland situated south of the City of Mendota along both sides of SR-33, between California Avenue on the north and Manning Avenue on the south (see Figure ES-5), approximately 30 miles northwest of the WSP plan area. The Alternative Project Site (hereinafter also referred to as the "Mendota Site") is located just north of a 230-kV transmission line which runs in an east-west direction through the area.

The impacts associated with the solar development of the Mendota alternative site would be similar to those associated with the planned WSP site in most categories including: agricultural resources, air quality, cultural resources and paleontology, geology and soils, greenhouse gas emissions, hazards and hazardous materials, hydrology and drainage, public services, traffic, and utilities and service systems. However, impacts at the Mendota site would be greater than the WSP site for the following impact categories: aesthetics, biological resources, land use and planning, and noise. There are no impact categories for which the Mendota site would result in a lower level of impact than the planned WSP site, and there are no categories for which the Mendota site would substantially lessen or avoid a significant impact associated with the proposed WSP project site. More importantly, the Mendota alternative site would not reduce or eliminate a significant and unavoidable impact, since there are no significant unmitigable impacts associated with the development of a solar generating facility at the proposed WSP project site.

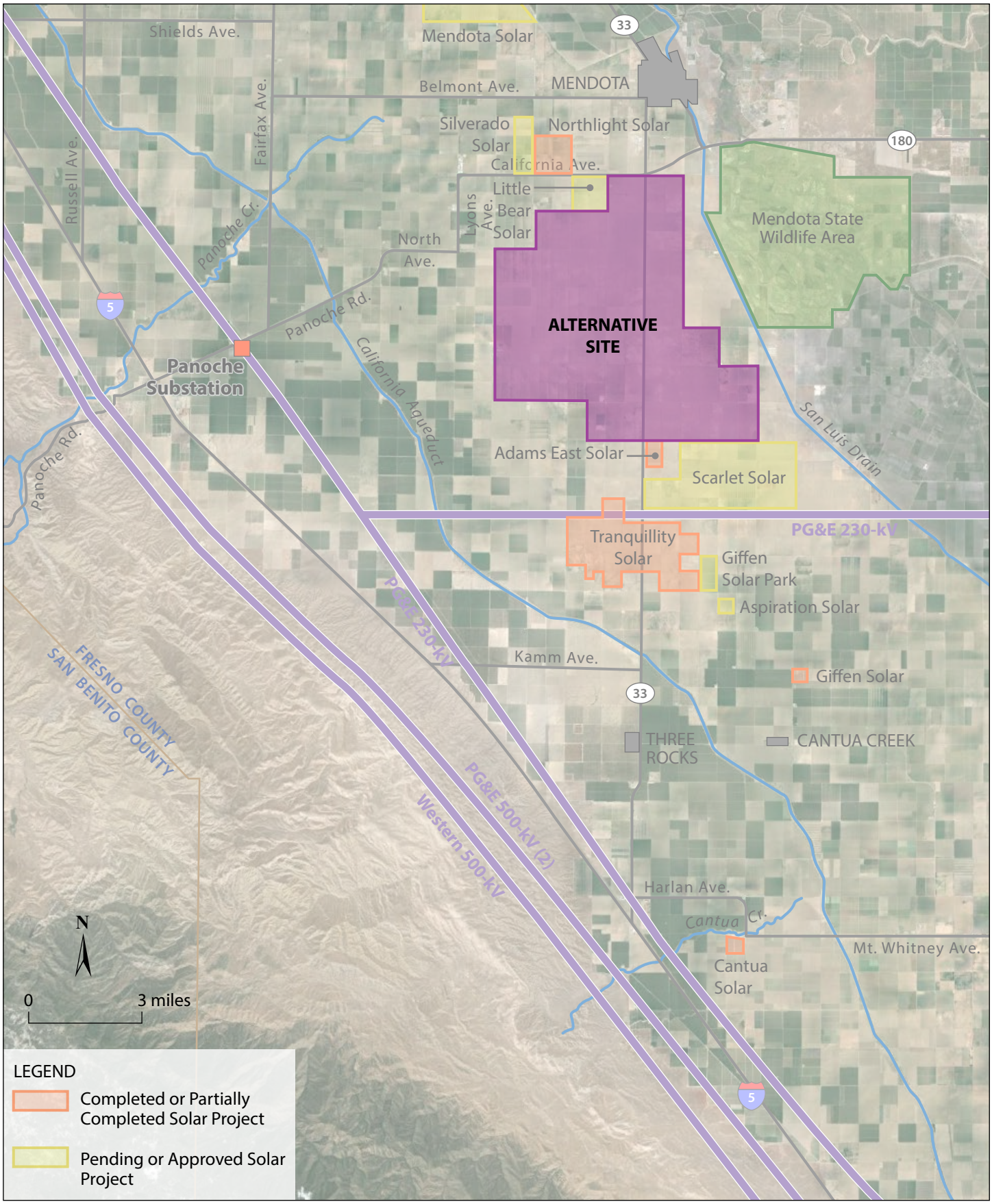
Summary – Environmentally Superior Alternative

The Reduced Project Size Alternative would result in somewhat lower levels of impact under most categories relative to the planned WSP solar development. However, all of the potential impacts associated with WSP solar development would be reduced to less-than-significant levels through mitigation measures to be incorporated into the planned WSP solar projects. Although the Reduced Project Size Alternative would not avoid or eliminate any significant project impacts which would not already be reduced to less-than-significant levels in the planned WSP solar development, this alternative would be the environmentally superior alternative because it would result in generally lower levels of impact in most categories compared to the planned WSP solar development.

ES.6.2. ALTERNATIVES TO THE WSP GEN-TIE CORRIDORS

No Project Alternative

The No Project Alternative assumes that the planned WSP gen-tie projects would not be constructed. This alternative consists largely of continuing the current farming and grazing operations within the corridor areas. The potential impacts associated with the No Project Alternative would be lower than those associated with the planned WSP gen-tie projects in all impact categories except greenhouse gas emissions/climate change. However, since the planned gen-tie projects result in no significant and unavoidable impacts, the No Project Alternative would not eliminate or substantially reduce such impacts. On balance, the No Project Alternative would represent an environmentally superior alternative to the planned WSP gen-tie projects. However, the No Project Alternative would not fulfill any of the project objectives, as restated at the beginning of this chapter, particularly the main objective of providing delivery of renewal solar power to the electrical grid. Without a means of delivering the solar power generated at the Westlands Solar Park, the development of the WSP plan area with solar PV facilities would not be technically feasible and thus would not occur. Thus, the No Project Alternative would also result in failure to meet the main WSP project objectives of



Base map: Google Earth, 2016

Westlands Solar Park - Alternative Site

Figure ES-5

This page intentionally left blank

helping to meet the state's renewable energy and greenhouse gas reduction targets, retiring all of the physically-impaired lands of the WSP site from irrigated agriculture, and maximizing reallocation of scarce imported water resources to more productive agricultural operations.

Gen-Tie Route Alternatives

As described in Section *2.0. Project Description*, the proposed project includes two planned WSP Gen-Tie Corridors to serve the Westlands Solar Park. These include the WSP-South to Gates Gen-Tie Corridor, which would consist of a single row of 230-kV monopoles, and the WSP-North to Gates Gen-Tie Corridor, which could also consist of a single row of 230-kV monopoles. An optional configuration would consist of two parallel 230-kV gen-ties lines in the southern corridor, in which case the northern gen-tie line would not be needed and would not be constructed. Since both gen-tie corridors are fully evaluated in this EIR, including full evaluation of a widened southern corridor to allow for the double gen-tie line, the optional configurations are evaluated a part of the proposed project. No other feasible gen-tie routes connecting the Westlands Solar Park with the Gates Substation have been identified. As such, no alternative gen-tie routes are evaluated in this EIR.

Summary – Environmentally Superior Alternative

The potential impacts associated with the No Project Alternative would be lower than those associated with the planned WSP Gen-Tie Corridors in all impact categories except greenhouse gas emissions/global climate change. However, since the planned gen-tie projects result in no significant and unavoidable impacts, the No Project Alternative would not eliminate or substantially reduce such impacts. On balance, the No Project Alternative would represent an environmentally superior alternative to the planned WSP Gen-Tie Corridors. However, the No Project Alternative would not fulfill any of the project objectives, as discussed above.

The CEQA Guidelines, at Section 15126.6(e)(2), provide that if the environmentally superior alternative is the No Project Alternative, the EIR shall also identify an environmentally superior alternative from among the other alternatives. As discussed above, there are no feasible alternative routes to the planned WSP Gen-Tie Corridor. Therefore, apart from the No Project Alternative, which would not achieve the project objectives, there is no environmentally superior alternative to the planned WSP Gen-Tie Corridors.

ES.7. AREAS OF POTENTIAL CONTROVERSY

Changes to Project Description since Issuance of the Original Notice of Preparation of 2013

It is important to note that the proposed project has been substantially reduced from the project described in the original Notice of Preparation issued in March 2013. In particular, the project no longer includes the Westlands Transmission Corridor (i.e., a planned transmission corridor extending from the Gates Substation northward to the Los Banos Substation in Merced County), since an interconnection request to the federal Western Area Power Administration has been filed which would involve a similar transmission facility along the west side of the valley, and for which a project-specific EIS/EIR will be prepared. . However, the project under review in this EIR still includes the planned gen-tie lines connecting the Westlands Solar Park (WSP) to the Gates Substation located approximately 12 miles to the west of the WSP. (A Revised NOP describing the plan modifications was issued on August 30, 2017.) Since the Westlands Solar Park does not require the construction of the Westlands Transmission Corridor to deliver power to the State electrical grid, it has "independent utility." Likewise, the Westlands Transmission Corridor does not require the completion of the Westlands Solar Park to fulfill its purpose of providing bulk transmission service along the west side of the San Joaquin Valley.

Comment Letters in Response to Original NOP of 2013

Due to the removal of the Westlands Transmission Corridor from consideration in this EIR, the comments received on the original NOP on the transmission corridor are no longer relevant to this environmental review, with the exception of comments directed specifically to the Westlands Solar Park and WSP Gen-Tie Corridors. Therefore, comments that were solely focused on the Westlands Transmission Corridor are not summarized here. Nevertheless, all comments received on the NOP are contained in Appendix B.

Comment letters on the original NOP were received from Caltrans District 6, California Department of Fish and Wildlife, California State Lands Commission, Native American Heritage Commission, San Joaquin Valley Air Pollution Control District, Central Valley Regional Water Quality Control Board, Kings County Department of Health, Kings County Community Development Agency, Fresno County Department of Public Works and Planning, Fresno County Public Library, Stanislaus County Environmental Review Committee, Defenders of Wildlife, The Nature Conservancy, California Consumers Alliance, Sempra Energy, Southern California Gas Company, Lozeau Drury LLP, Solo Mio Farms, and Ron Dickerson. The letters from the state, regional, and local agencies are focused on technical issues within their areas of responsibility and include recommendations with respect to the EIR's content in areas within their purview. These NOP comments are addressed under the environmental topics corresponding to the respective agencies' concerns (i.e., Transportation/Traffic, Biological Resources, Cultural Resources, Air Quality, Hazards and Hazardous Materials, and Land Use and Planning). These comments do not raise potentially controversial issues.

The letters from the Southern California Gas Company and its parent company Sempra Energy request that the company's high pressure natural gas transmission pipeline that runs through the WSP plan area be duly considered in project planning and that safety protocols be followed in the vicinity of the gas pipeline. The EIR addresses the hazard and safety issues related to the pipeline. This is not a potentially controversial issue.

The comment letters from Defenders of Wildlife and The Nature Conservancy included concerns with biological resources and expressed general support for the Westlands Solar Park. The concerns regarding biological resources are fully addressed in Section *3.4. Biological Resources*. There are no potentially controversial issues remaining with respect to biological resources.

The California Consumers Alliance comment letter expresses concerns with potential impacts to biological and cultural resources, which are fully addressed in the EIR. The CCA comment letter also suggests consideration of a reduced project size alternative for the Westlands Solar Park; the EIR identifies and evaluates a reduced project size alternative. The CCA letter is supportive of the planned Westlands solar and associated transmission facilities, provided its social and environmental concerns are addressed. The potential areas of controversy raised in this comment letter have been fully addressed in the EIR.

The letter from Lozeau Drury LLP (on behalf of the Laborers International Union of North America, Local Union 294), requests to receive notices of all actions related to the EIR. No potentially controversial issues are raised in this letter.

Public Scoping Meeting

On April 9, 2013, the Westlands Water District held a duly noticed Public Scoping Meeting at the District Headquarters in Fresno. The meeting was well attended by agency and NGO representatives, and members of the public.

The comments presented at the scoping meeting included many of the concerns raised in the NOP comment letters, summarized above, in addition to newly presented concerns. The following is summary of the issues of concern related to the Westlands Solar Park raised in the NOP comment letters and in oral comments received at the public scoping meeting:

Aesthetics
- Glint and glare impacts to aircraft especially near NAS Lemoore

Agricultural Resources
- Agricultural impacts of transmission corridors on permanent tree and vine crops
- Williamson Act conversions need to be completed prior to construction of solar park

Air Quality
- Air Quality impacts from construction dust and toxic air contaminants

Biological Resources
- Biological impacts of solar park to protected species and habitats
    - implement wildlife friendly project design and construction practices
    - prohibit use of rodenticides
    - evaluate cumulative impacts to wildlife habitat
    - evaluate potential kit fox migration routes

Cultural Resources
- Cultural resource impacts in areas of archaeological sensitivity

Traffic/Transportation
- Traffic impacts from construction traffic upon state highways
    - encroachment permits
    - setbacks of solar panels from state ROW

Utilities and Urban Services
- Utility impacts to existing natural gas pipelines

Comment Letters on the Revised NOP of August 2017

As mentioned, a Revised NOP describing the plan modifications was issued on August 30, 2017. Comment letters on the Revised NOP were received from the California Department of Water Resources (DWR), California Department of Fish and Wildlife (CDFW), San Joaquin Valley Air Pollution Control District (SJVAPCD), SoCalGas, Defenders of Wildlife, and California Consumers Alliance (CCA). The letters from the state and regional agencies are focused on technical issues within their areas of responsibility and include recommendations with respect to the EIR's content in areas within their purview. The matters raised in the NOP comments are addressed under the environmental topics corresponding to the respective agencies' concerns (i.e., Air Quality, Biological Resources, and Land Use and Planning). These comments do not raise potentially controversial issues.

The letter from SoCalGas requests that the company's high pressure natural gas transmission pipeline and branch lines that run through the WSP plan area be duly considered in project planning and that safety protocols be followed in the vicinity of the gas pipelines. The EIR addresses the hazard and safety issues related to the pipelines. This is not a potentially controversial issue.

The comment letter from Defenders of Wildlife addresses biological resources and expressed general support for the Westlands Solar Park. The concerns regarding biological resources are fully addressed in Section *3.4. Biological Resources*. There are no potentially controversial issues with respect to biological resources.

The California Consumers Alliance comment letter requests clarifications regarding several aspects of the project description, most of which are addressed in this EIR. It is noted that since this is a Program EIR which evaluates plan-level impacts, some of the project-level details requested by CCA have not been defined at this stage, and will be appropriately defined at the project level and addressed in subsequent project-specific environmental review. The CCA letter also suggests consideration of the Distributed Generation Alternative, which is addressed in the alternatives section of this EIR. …..

1. INTRODUCTION

1.1. ENVIRONMENTAL REVIEW UNDER CEQA

Purpose of This EIR

This Environmental Impact Report (EIR) assesses the potential environmental effects of the adoption and long-term implementation of the Westlands Solar Park (WSP) Master Plan and WSP Gen-Tie Corridors Plan. This EIR has been prepared by a consultant on behalf of the Westlands Water District (WWD) as Lead Agency in conformance with the California Environmental Quality Act (CEQA) of 1970, as amended, to inform public decision-makers and the public of the significant environmental impacts of the projects and plans that they propose to consider.

The following sections from the CEQA Guidelines define the role and purpose of an EIR:

> **§15121(a) Informational Document.** An EIR is an informational document which will inform public agency decision-makers and the public generally of the significant environmental effect of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project. The public agency shall consider the information in the EIR along with other information which may be presented to the agency.
>
> **§15151 Standards of Adequacy of an EIR.** An EIR should be prepared with a sufficient degree of analysis to provide decision-makers with information which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is reviewed in light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among experts. The courts have not looked for perfection but for adequacy, completeness, and a good faith effort at full disclosure.

Type of Environmental Document – Program EIR

This EIR is a "Program EIR" as provided for in Section 15168 of the CEQA Guidelines. Program EIRs are intended to provide plan-level or programmatic environmental review, as distinguished from project-level environmental review conducted for discretionary approvals of projects proposed for construction. According to the Guidelines, a Program EIR may be prepared on a series of actions that can be characterized as one large project, are related geographically, and as logical parts in a chain of contemplated actions. The Program EIR allows for a more exhaustive consideration of effects and alternatives than would be practical an EIR on separate individual actions, and ensures consideration of cumulative impacts that might be missed on a case-by-case basis.

EIR Scoping

Scope and content of this EIR were determined by WWD staff based on preliminary analyses and on comments received from the public and agencies, as described below.

Preliminary Staff Determinations

In the early planning and evaluation stages, it was determined by WWD staff that an Environmental Impact Report was the appropriate form of environmental documentation under CEQA. Section 15126 of the CEQA Guidelines states that an EIR shall identify and focus on the significant environmental effects of a proposed project. The potentially significant impacts that could result from the project were preliminarily identified by WWD staff upon initiation of the environmental review process. Based on staff's preliminary evaluation, it was determined that the following general topic areas were to be addressed in this EIR:

Aesthetics	Hydrology and Water Quality
Agricultural Resources	Land Use and Planning
Air Quality and Climate Change	Noise
Biological Resources	Paleontological Resources
Cultural Resources (& Tribal Cultural Resources)	Public Services
Geology and Soils (& Mineral Resources)	Transportation/Traffic
Hazards and Hazardous Materials	Utilities and Service Systems

Those topics for which no potentially significant impacts are expected are briefly discussed at the end of Chapter 3 in Section *3.15. Effects Found Not To Be Significant*. These topics include: Forestry Resources, Population and Housing, and Recreation.

Notice of Preparation (NOP)

Upon WWD staff's determination that an EIR was required for this project, a Notice of Preparation was issued on March 13, 2013 to solicit input on issues of concern that should be addressed in the EIR. The NOP was mailed and emailed to public agencies and interested parties, and published in newspapers of general circulation in Kings, Fresno, Merced, and Madera Counties. The NOP included a project description and a brief overview of the topics to be covered in the EIR. (Note: No Initial Study was prepared as provided under CEQA Guidelines Section 15063 which states that no Initial Study is required if the Lead Agency determines that an EIR is clearly required, as it was in this case.) The NOP and comments received on the NOP are contained in Appendix A of this EIR.

It is important to note that the program has been substantially reduced from the program described in the Notice of Preparation. In particular, the program no longer includes the Westlands Solar Park Transmission Corridor, since an interconnection request to the federal Western Area Power Administration has been filed which would involve a similar transmission facility along the west side of the valley, and for which a project-specific EIS/EIR will be prepared. Since the Westlands Solar Park does not require the construction of the Westlands Solar Park Transmission Corridor to generate and deliver power to the State electrical grid, it has "independent utility." Likewise, the Westlands Solar Park Transmission Corridor does not require the completion of the Westlands Solar Park to fulfill its purpose of providing bulk transmission service along the west side of the San Joaquin Valley. However, the project under review in this EIR still includes the planned gen-tie lines connecting the Westlands Solar Park (WSP) to the Gates Substation located approximately 12 miles to the west of the WSP. The modifications to the plans are described in detail in Chapter *2. Project Description*.

Revised Notice of Preparation

On August 30, 2017, WWD issued a Revised NOP to inform agencies and the public of the modifications to the WSP Master Plan and transmission plan that have been made since the original NOP was issued in 2013. These changes are briefly identified above, and are fully described in Section *2. Project Description*. The Revised NOP and comments received on the Revised NOP are contained in Appendix A of this EIR. The comments are summarized below following the discussion on the Public Scoping Meeting.

Comment Letters in Response to Original NOP of 2013

Due to the removal of the Westlands Solar Park Transmission Corridor from consideration in this EIR, the comments received on the original NOP on the transmission corridor are no longer relevant to this environmental review. Therefore, comments that were solely focused on the Westlands Transmission Corridor are not summarized here. However, all comments received on the NOP, including those that address the Westlands Transmission Corridor, are contained in Appendix A.

Comment letters on the original NOP were received from several public agencies, local governments, non-governmental organizations (NGOs), advocacy groups, public utilities, and individuals. These included comment letters from Caltrans District 6, California Department of Fish and Wildlife, California State Lands Commission, California Native Heritage Commission, San Joaquin Valley Air Pollution Control District, Central Valley Regional Water Quality Control Board, Kings County Community Development Agency, Kings County Health Department, Fresno County Department of Public Works and Planning, Fresno County Public Library, Stanislaus County Environmental Review Committee, Defenders of Wildlife, The Nature Conservancy, California Consumers Alliance, Sempra Energy, Southern California Gas Company, Lozeau Drury LLP, Solo Mio Farms, and Ron Dickerson. The NOP and comment letters are contained in Appendix B of this EIR. The environmental issues raised in the comment letters are summarized below.

The letters from the state, regional, and local agencies are focused on technical issues within their areas of responsibility and include recommendations with respect to the EIR's content in areas within their purview. These NOP comments are addressed under the environmental topics corresponding to the respective agencies' concerns (i.e., Transportation/Traffic, Biological Resources, Cultural Resources, Air Quality, Hazards and Hazardous Materials, and Land Use and Planning). These comments do not raise potentially controversial issues.

The letters from the Southern California Gas Company and its parent company Sempra Energy request that the company's high pressure natural gas transmission pipeline that runs through the WSP plan area be duly considered in project planning and that safety protocols be followed in the vicinity of the gas pipeline. The EIR addresses the hazard and safety issues related to the pipeline. This is not a potentially controversial issue.

The comment letters from Defenders of Wildlife and The Nature Conservancy included concerns with biological resources and expressed general support for the Westlands Solar Park and Transmission Corridors Plan. The expressed concerns with biological resources are fully addressed in Section *3.4. Biological Resources*. There are no potentially controversial issues remaining with respect to biological resources.

The California Consumers Alliance comment letter expresses concerns with potential impacts to biological and cultural resources, which are fully addressed in the EIR. The CCA comment letter also suggests consideration of a reduced project size alternative for the Westlands Solar Park; the EIR identifies and evaluates a reduced project size alternative. The CCA letter is supportive of the planned WSP solar and transmission facilities, provided its social and environmental concerns are addressed. The potential areas of controversy raised in this comment letter have been fully addressed in the EIR.

The letter from Lozeau Drury LLP (on behalf of the Laborers International Union of North America, Local Union 294), requests to receive notices of all actions related to the EIR. No potentially controversial issues are raised in this letter.

Public Scoping Meeting

On April 9, 2013, the WWD held a public scoping meeting to which public agencies, organizations, and interested members of the public were invited, and which had been duly noticed in the NOP and through notices in newspapers of general circulation in Kings, Fresno, Merced, and Madera Counties. The scoping meeting was held at the WWD administrative offices in Fresno and was well attended by agency and NGO representatives, and members of the public.

Summary of Environmental Issues Raised in EIR Scoping

The comments presented at the scoping meeting included many of the concerns raised in the NOP comment letters, summarize above, in addition to newly presented concerns. The following is summary of all of the issues of concern raised in the NOP comment letters and in oral comments received at the public scoping meeting:

<u>Aesthetics</u>
- Glint and glare impacts to aircraft especially near NAS Lemoore

<u>Agricultural Resources</u>
- Agricultural impacts of transmission corridors on permanent tree and vine crops
- Williamson Act conversions need to be completed prior to construction of solar park

<u>Air Quality</u>
- Air Quality impacts from construction dust and toxic air contaminants

<u>Biological Resources</u>
- Biological impacts of solar park to protected species and habitats
    - implement wildlife friendly project design and construction practices
    - prohibit use of rodenticides
    - evaluate cumulative impacts to wildlife habitat
    - evaluate potential kit fox migration routes

<u>Cultural Resources</u>
- Cultural resource impacts in areas of archaeological sensitivity

<u>Traffic/Transportation</u>
- Traffic impacts from construction traffic upon state highways
    - encroachment permits

- setbacks of solar panels from state ROW

Utilities and Urban Services
- Utility impacts to existing natural gas pipelines

Comment Letters on the Revised NOP of August 2017

As mentioned, a Revised NOP describing the plan modifications was issued on August 30, 2017. Comment letters on the Revised NOP were received from the California Department of Water Resources (DWR), California Department of Fish and Wildlife (CDFW), San Joaquin Valley Air Pollution Control District (SJVAPCD), SoCalGas, Defenders of Wildlife, and California Consumers Alliance (CCA). The letters from the state and regional agencies are focused on technical issues within their areas of responsibility and include recommendations with respect to the EIR's content in areas within their purview. The matters raised in these NOP comments are addressed under the environmental topics corresponding to the respective agencies' concerns (i.e., Air Quality, Biological Resources, and Land Use and Planning). These comments do not raise potentially controversial issues.

The letter from SoCalGas requests that the company's high pressure natural gas transmission pipeline and branch lines that run through the WSP plan area be duly considered in project planning and that safety protocols be followed in the vicinity of the gas pipelines. The EIR addresses the hazard and safety issues related to the pipelines. This is not a potentially controversial issue.

The comment letter from Defenders of Wildlife addresses biological resources and expressed general support for the Westlands Solar Park. The concerns regarding biological resources are fully addressed in Section *3.4. Biological Resources*. There are no potentially controversial issues with respect to biological resources.

The California Consumers Alliance comment letter requests clarifications regarding several aspects of the project description, most of which are addressed in this EIR. In response, it is noted that since this is a Program EIR that evaluates plan-level impacts, some of the project-level details requested by CCA have not been defined at this stage, and will be appropriately defined at the project level and addressed in subsequent project-specific environmental review. The CCA letter also suggests consideration of the Distributed Generation Alternative, which is addressed in the alternatives section of this EIR. ….

Public and Agency Review of the Draft EIR

The EIR review process involves the following steps:

Public Notice/Public Review of Draft EIR

Upon completion of the Draft EIR (DEIR), the WWD filed a Notice of Completion (NOC) with the State Clearinghouse, Office of Planning and Research, to begin the public and agency review period. Concurrent with filing the NOC, the WWD provided public notice of the availability of the Draft EIR (DEIR) for public review, and invited comment from the general public, agencies, organizations, and other interested parties. The length of the public review period is 45 days (from October 17 through November 30, 2017), during which time written comments on the DEIR may be submitted to Kiti Buelna Campbell, Westlands Water District, either by mail addressed to P.O. Box 6056, 3130 N. Fresno Street, Fresno, California 92703-6056 or by email to kcampbell@westlandswater.org.

Responses to Comments/Final EIR

After the close of the public review period, the WWD will prepare formal responses to the written comments received, along with an addendum section indicating any revisions made to the EIR. A Final EIR will be prepared which contains the comment letters, responses to comments, and the revisions to the DEIR. The Draft EIR will remain a separate document, and will be incorporated into the Final EIR by reference only.

Certification of the Final EIR

After release of the Final EIR, the WWD Board of Directors will hold a public hearing to consider the completeness of the EIR under CEQA (see 'Purpose of this EIR' above), and if it finds the EIR to be complete, will adopt a resolution to certify the EIR.

According to the CEQA Guidelines, "certification" consists of three separate steps. The agency's decision-making body must conclude, first, that the document "has been completed in compliance with CEQA;" second, that the body has reviewed and considered the information within the EIR prior to approving the project; and third, that "the final EIR reflects the lead agency's independent judgment and analysis" (CEQA Guidelines, Section 15090(a); see also PRC Section 21082.1(c)(3)).

Before approving a project for which a certified final EIR has identified significant environmental effects, the lead agency must make one or more specific written findings for each of the identified significant impacts. These findings are as follows:

1. Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the EIR.

2. Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.

3. Specific economic, legal, social, technological, or other considerations make infeasible the mitigation measures or project alternatives identified in the final EIR (CEQA Guidelines Section 15091(a)).

If there remain significant environmental effects, even with the adoption of all feasible mitigation measures or alternatives, the agency must adopt a "statement of overriding considerations" before it can proceed with the project. The statement of overriding considerations must be supported by substantial evidence in the record (CEQA Guidelines Sections 15091(b)).

These overriding considerations include the economic, legal, social, technological, or other benefits of the project. The lead agency must balance these potential benefits against the project's unavoidable environmental risks when determining whether to approve the project. If the specific economic, legal, social, technological, or other benefits of a project outweigh the unavoidable adverse environmental effects, the lead agency may consider the adverse environmental impacts to be "acceptable" (CEQA Guidelines Section 15093(a)). These benefits should be set forth in the statement of overriding considerations, and may be based on the final EIR and/or other information in the record of proceedings (CEQA Guidelines Section 15093(b)).

The WWD Board of Directors must certify the EIR prior to adoption of the Westlands Solar Park Master Plan and WSP Gen-Tie Corridors Plan. After the EIR is certified, the WWD Board may consider the Plans for adoption. Once the EIR is certified and the Plans adopted, these actions will be final.

Within five working days of Plan adoption, CEQA requires that the WWD file Notice of Determination (NOD) with the County Clerk, which certifies that the Plans have been formally adopted. This filing begins the running of a 30-day statute of limitations period during which legal challenges to the EIR may be filed in Superior Court.

Mitigation Monitoring and Reporting Program (MMRP)

Upon certification of the EIR, the WWD will also adopt a program for monitoring and reporting on the measures it has identified to mitigate, avoid, or substantially lessen the significant impacts of the Plans. If discretionary approval of the individual solar and gen-tie projects under the WSP Master Plan and Gen-Tie Corridors Plan are within the jurisdiction of other agencies, it is expected that those agencies "can and should" adopt and apply these mitigations to those individual projects. (Note: In the 2013 *Smart Rail* decision, the California Supreme Court upheld the ability of a lead agency to adopt mitigation measures whose implementation and enforcement is under the jurisdiction of another agency, citing the "can and should" language of Public Resources Code § 21081(a) and CEQA Guidelines § 15091(a) [*Neighbors for Smart Rail v. Exposition Metro Line Construction Authority* (2013) 57 Cal.4th 439.])

1.2. USES OF THIS EIR

This EIR is intended to provide program-level CEQA review for agencies with jurisdiction with respect to the Westlands Solar Park and/or the WSP Gen-Tie Corridors. These agencies and their approval actions are listed below.

Westlands Water District

- Adoption of WSP Master Plan and WSP Gen-Tie Corridors Plan – The certification of this EIR will serve as CEQA compliance for WWD Board of Directors' adoption of the Westlands Solar Park Master Plan and WSP Gen-Tie Corridors Plan as District planning policy.

County of Kings

Individual solar projects proposed within WSP would be subject to the several discretionary approvals from Kings County, as listed below. Kings County decision-makers may utilize the program-level environmental review of this EIR in preparing second-tier project-specific environmental documents on discretionary approvals for individual solar projects proposed within the Westlands Solar Park Master Plan area, and associated gen-tie projects.

- Conditional Use Permits (CUPs) for individual solar development projects proposed within WSP, and for gen-tie segments located within Kings County.

- Vesting Tentative Parcel Maps (or Lot Line Adjustments) to create land divisions corresponding to the boundaries of the individual solar projects, as necessary.

- Encroachment Permits for work in County road rights-of-way, and for utility crossings over or under County roads.

Western Area Power Administration (Western or WAPA)

It is anticipated that Western will serve as the federal lead agency in sponsoring the separate Westside Transmission Project (Gates to Dos Amigos/Los Banos). Western would be the federal Lead Agency for preparation of the Environmental Impact Statement (EIS) portion of the joint EIS/EIR under the National Environmental Policy Act (NEPA). The information and analysis contained in this EIR with respect to the WSP and associated gen-ties may be relied upon in preparing the joint EIR/EIS on the Westside Transmission Project.

California Public Utilities Commission (CPUC)

It is anticipated that the WSP gen-tie projects will be privately constructed and operated, and thus will not be subject to the approval jurisdiction of the CPUC. However, it is possible that some or all of the WSP gen-tie projects substations, and substation upgrades (and possible switching stations) may be constructed by or for PG&E, which is subject to the regulatory authority of the CPUC. The CPUC would issue Permits to Construct (PTCs), or Certificates of Public Convenience and Necessity (CPCNs) (the latter are required for any transmission projects requesting ratepayer funding). The CPUC may utilize the information in this EIR to inform their decisions and approvals.

It is noted that the California Energy Commission (CEC) has no jurisdiction over the WSP solar PV projects. The CEC has no jurisdiction over solar PV projects, and only has jurisdiction over concentrating solar (thermal solar) projects over 50 MW. The CEC also does not have jurisdiction over permitting of transmission projects. The CEC has authority to designate Transmission Corridor Zones under California law, which is a voluntary program for prospective transmission corridor proponents. A Transmission Corridor Zone designation from CEC is not required for the construction of a transmission line.

Other Agencies

In addition, the information in this EIR may be used by the following responsible and trustee State, regional, and local agencies for their separate permit and review processes in conjunction with subsequent approvals of individual solar generating facilities proposed within the WSP, and associated gen-tie projects.

County of Fresno: 1) Approval of unclassified conditional use permits for gen-tie segments located in Fresno County; 2) Encroachment permits for work in County road rights-of-way; 3) Building permits and other ministerial permits (does not apply to upgrades within existing substation fence lines). (Note: Public utility projects that are subject to approval by CPUC are exempt from local discretionary approval under CPUC General Order 131-D, although coordination with local jurisdictions regarding consistency with plans and policies is required. Thus, if one or both of the gen-tie segments located within Fresno County are subject to CPUC jurisdiction, the County would review of WSP gen-tie projects for consistency with County plans and policies. However, it is anticipated that the WSP gen-tie projects will be privately constructed and operated, and thus will not be subject to the approval jurisdiction of the CPUC, but will instead be subject to local land use approval authority.)

San Joaquin Valley Air Pollution Control District (SJVAPCD): 1) Indirect Source Review (ISR) under Air District Rule 9510; 2) Approval of construction Dust Control Plans under Air District Regulation VIII; 3) Compliance with other Air District rules and regulations (e.g., Rule 4601 for asphalt paving; Rule 2010

permit to operate for equipment greater than 50 horsepower resulting in emissions; Rule 2280 registration for portable equipment resulting in emissions).

Regional Water Quality Control Board – Central Valley Region (CVRWQCB): 1) Administration of General Permit for Storm Water Discharges Related to Construction Activities under the National Pollutant Discharge Elimination System (NPDES), including review and approval of Storm Water Pollution Prevention Plans (SWPPPs); 2) Water quality certification (or waiver) for any planned work in 'Waters of the State' under the State Porter-Cologne Water Quality Control Act and/or 'Waters of the U.S.' under Section 401 of the federal Clean Water Act.

California Department of Transportation (Caltrans): 1) Encroachment permits for utility crossings over state highways; 2) Oversize/overweight permit and Traffic Control Plan.

California Department of Fish and Wildlife (CDFW): 1) Streambed Alteration Agreement under Sections 1601-1602 of the California Fish and Game Code for any work in or alteration of a creek or other water body; 2) Coordination and permitting under the California Endangered Species Act for any potential impacts to State-protected species.

California Department of Water Resources (DWR): 1) Encroachment permits for gen-tie crossings over the California Aqueduct.

US Army Corps of Engineers (USACE): 1) Authorization for any work in or alteration of a federally-designated wetland or 'Water of the U.S.' under Section 404 of the federal Clean Water Act.

US Fish and Wildlife Service (USFWS): 1) Coordination and permitting under the federal Endangered Species Act for any potential impacts to federally-protected species; 2) Coordination with the U.S. Army Corps of Engineers in connection with any potential Section 404 permits under the federal Clean Water Act.

This page intentionally left blank

2. PROJECT DESCRIPTION

2.1. INTRODUCTION AND BACKGROUND

2.1.1. Overview of Westlands Solar Park and WSP Gen-Tie Corridors Plan

The overall project covered by this EIR includes two main elements, consisting of: 1) the Westlands Solar Park ("WSP") Master Plan, which is an overall plan of development for solar generating facilities within WSP; and 2) the Westlands Solar Park Generation-Interconnection Tie-Line Corridors Plan ("WSP Gen-Tie Corridors Plan"), which is the route plan for high-voltage transmission corridors to provide interconnection and capacity for delivery of WSP-generated power to the State electrical grid at Gates Substation. These main project elements are interrelated and mutually supportive, and for the sake of brevity are also referred to as the Westlands Solar Park and WSP Gen-Tie Corridors. The main plan elements and their settings are shown in Figures PD-1 and PD-2 and are briefly described below.

1) Westlands Solar Park (WSP) Master Plan – The WSP Master Plan is intended to serve as the planning framework for a series of utility-scale solar photovoltaic (PV) energy generating facilities on about 21,000 acres in west-central Kings County, generally located south of SR-198, west of SR-41 and the Kings River, and east of the Fresno County Line. The combined generating capacity of WSP solar projects is estimated to be 2,000 MW, although the final power output could increase with improved solar PV module efficiency over the course of the WSP buildout period. The solar PV projects developed within WSP would have varying generating capacities, with the power output from the solar facilities ranging up to about 250 MW. The installation of solar generating facilities is planned to occur incrementally over an approximately 12-year buildout period extending to about 2030. The rate of solar project installation is anticipated to range from about 20 to 250 MW per year, with the installation rate averaging about 167 MW per year over the 12-year buildout period. For planning purposes, Master Plan area is divided into 12 subareas (or solar generating facilities – SGFs), and includes several substations to step up the generated power to a transmission voltage of 230-kV.

2) Westlands Solar Park to Gates Substation Gen-Tie Corridors – Two gen-tie lines are planned to deliver WSP solar-generated power to the State's electrical grid at the Gates Substation, as follows:

   a. WSP-South to Gates Gen-Tie Corridor – This planned 230-kV gen-tie corridor would run parallel and adjacent to the Nevada-Jayne Avenue roadway right-of-way, commencing at planned substation on Nevada Avenue in the south-central portion of WSP and running westward along the north side of the roadway for 11.5 miles to the Gates Substation. This gen-tie corridor would serve as the first of two WSP (gen-ties providing delivery of solar power generated in the central and southern portions of the WSP to the Gates Substation where it would be transferred to the State electrical grid. [An optional configuration under consideration would consist of two parallel 230-kV gen-ties in this alignment, as an alternative to the second gen-tie corridor described below.]

   b. WSP-North to Gates Gen-Tie Corridor – This planned 230-kV transmission corridor would run parallel and adjacent to the existing 230-kV Henrietta-Gates transmission line, commencing at a planned substation in the northern portion of WSP, and running southwestward for 11.5 miles to the Gates Substation.

This transmission corridor would serve as the second WSP gen- tie line providing delivery of solar power generated in the northern and central portions of the WSP to the Gates Substation where it would be transferred to the State electrical grid. [As mentioned above, this gen-tie alignment may not be pursued if it is ultimately decided to add a second parallel gen-tie line along the Nevada-Jayne Avenue alignment described above. Alternatively, it is possible that this corridor may include two parallel 230-kV gen-tie lines, in which case the southern gen-tie described above may not be constructed.]

Role of WSP Master Plan and Transmission Plan in WWD's Policy Scheme

The WSP Master Plan is intended to serve as a further refinement of WWD's *Land Use and Asset Management Plan*. More specifically, the WSP Master Plan provides further definition of the policy directive contained in the Land Use and Asset Management Plan which identifies renewable energy development as a preferred form of development for the reuse of retired lands, particularly those lands located in the vicinity of existing electrical substations. The WSP Gen-Tie Corridors Plan is intended to advance the implementation of the WSP Master Plan by providing the means for delivery of WSP solar generation to the State electrical grid.

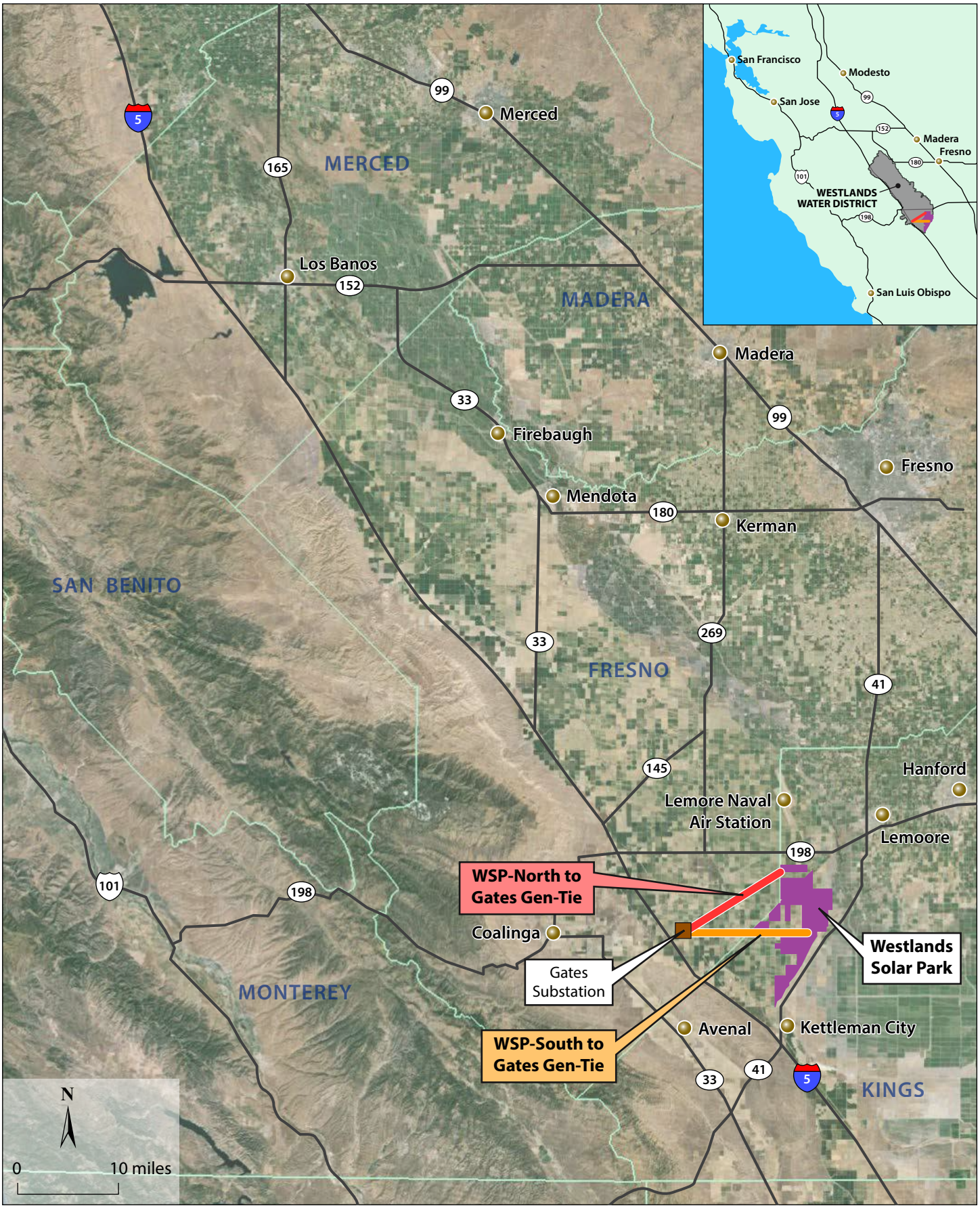
Role of WSP in Statewide Renewable Energy Planning

The foundation for renewable energy planning in California is the legislative mandate to reduce greenhouse gas emissions under AB 32 (California Global Warming Solutions Act of 2006, as extended and supplemented by SB 32 in 2016), and a related series of Executive Orders establishing and updating the Renewable Portfolio Standard (RPS), which currently requires that 50 percent of the electricity provided by each of the State's Investor-Owned Utilities (IOUs) be generated by renewable sources by 2030.

In 2010, the California Public Utilities Commission (CPUC), the California Energy Commission (CEC), the California Independent System Operator (CAISO), utility providers, and stakeholders participated in a statewide planning effort, known as the California Renewable Energy Transmission Initiative (RETI), to identify the electricity transmission corridors necessary for California to meet the RPS goals. The RETI planning process identified various renewable resource-rich areas, along with conceptual transmission upgrades needed to connect these areas to the statewide grid. The RETI process resulted in the designation of Competitive Renewable Energy Zones (CREZs), which are areas determined to hold the greatest potential for cost-effective and environmentally responsible renewable energy development. The WSP is entirely located in an area that has been designated by the RETI as the Westlands CREZ, which is the only CREZ in the San Joaquin Valley. Westlands CREZ was designated by RETI because it consists of disturbed agricultural land contaminated with selenium, and is adjacent to existing transmission and near the Gates substation. Through the RETI process, the Westlands CREZ was identified as having a potential renewable energy resource of up to 5,000 MW.

Recent Refinements to WSP Master Plan and Transmission Corridors Plan

The plans evaluated in this EIR have been refined during the several years since the initial planning stages for the Westlands Solar Park, and since the original Notice of Preparation (NOP) for the WSP Master Plan and Transmission Corridors EIR issued in March 2013 (contained in Appendix B of this EIR). These changes are described below, in relation to the Master Plan elements as described in the NOP. (The plan modifications were also described in the Revised NOP, issued in August 2017.)



Base map: Google Earth, 2016

Regional Location

Figure PD-1

This page intentionally left blank

a. Westlands Solar Park Master Plan – Some of the land areas included in the WSP Master Plan as described in the original NOP have been removed from the Master Plan Area. The lands removed consist of properties in the northern and south-central portions of the plan area. As a result, the overall land area included in the WSP Master Plan has been reduced from approximately 24,000 acres to approximately 21,000 acres, and the corresponding estimate of total generating capacity has been reduced from approximately 2,400 MW to approximately 2,000 MW, based on assumed development intensity of PV solar facilities of about 10 gross acres per MW. No new lands have been added to the Master Plan area as described in the NOP.

b. Westlands Transmission Corridors Plan – The transmission corridors plan described in the original NOP has been modified in two ways, as follows:

   i. Gates to Gregg Corridor – The project description in the original NOP included a new transmission corridor connecting the Gates Substation with the Gregg Substation located just north of Fresno. The southern 26-mile segment of this corridor was to be shared with the Westlands Transmission Corridor, as described below. Subsequently, PG&E initiated the separate Central Valley Power Connect (CVPC) project to construct a new transmission line between the Gates and Gregg substations. As such, the Gates to Gregg transmission element of the Westlands Solar Park Transmission Plan became redundant and was therefore eliminated as part of the proposed project to be evaluated in this EIR.

   ii. Westlands Solar Park Transmission Corridor – The initial concept for this corridor was to have it include two interior segments that would mainly follow new alignments northward through the interior of Westlands Water District. The first segment would commence at the Gates Substation and diverge from the existing 230-kV transmission line (along I-5) near SR-198 east of Harris Ranch and head directly north to a point southwest of the Helm Substation (this route is shown in the original NOP in Appendix B). The 26-mile first segment from Gates to Helm was intended to be a joint transmission corridor to be shared with the Gates to Gregg corridor, described above. The second segment was planned to branch off at the Helm junction and head northwestward for about 20 miles to rejoin the I-5 corridor alignment which would then continue northwest parallel to the existing 230-kV transmission lines for a final 40 miles to the Los Banos Substation on SR-152 near Santa Nella.

   Subsequent to removal of the Gates to Gregg corridor from the Westlands Transmission Plan, the original interior transmission route lost its primary beneficial attribute of providing for a joint transmission corridor with the Gates to Gregg corridor in the southern segment. Accordingly, a new preferred route for the Westlands Transmission Corridor was identified along the west side of the valley, with the transmission corridor running parallel and adjacent to existing transmission lines near I-5.

   Subsequent to the identification of a new preferred transmission route along the west side of the valley through this planning and EIR process, a separate interconnection application was filed with the federal Western Area Power Administration (WAPA or Western) to construct a new transmission line along the west side of the valley between the Gates Substation and the Dos Amigos Pumping Plant, and potentially further on to the Los Banos. That transmission corridor will be the subject of a separate project-specific EIS/EIR. Since that joint NEPA/CEQA document will provide full project-level environmental review for a transmission corridor along

the west side of the valley, the programmatic review of a westside transmission corridor that was originally planned in this EIR became redundant and was therefore eliminated from consideration in this document.

iii. Henrietta-Gates Transmission Upgrades – Under the original transmission plan, the renewable energy generated at WSP was to be conveyed to the Gates Substation solely by an 11-mile transmission line running parallel and adjacent to the existing 230-kV Henrietta-Gates transmission line. That transmission corridor is still part of the plan but has been renamed the "WSP-North to Gates Gen-Tie."

iv. WSP-South to Gates Gen-Tie Corridor – This 11.5 mile transmission corridor has been added to the plan to serve the central and southern portions of the WSP plan area. This gen-tie corridor is described in further detail below.

2.2. PROJECT OBJECTIVES

Introduction

State CEQA Guidelines Section 15124(b) indicates that an EIR should include:

> "A statement of objectives sought by the proposed project. A clearly written statement of objectives will help the lead agency develop a reasonable range of alternatives to evaluate in the EIR and will aid the decision makers in preparing findings or a statement of overriding considerations, if necessary. The statement of objectives should include the underlying purpose of the project."

Overall Project Goals

The Westlands Solar Park Master Plan and WSP Gen-Tie Corridors Plan are intended to fulfill the following goals:

1) To provide an overall plan to guide and facilitate the beneficial reuse of drainage-impaired lands through development of renewable energy generation in the Westlands Competitive Renewable Energy Zone (CREZ).
2) To establish the preferred transmission gen-tie corridors to convey WSP-generated renewable energy to the statewide electricity market. Establishment of these routes would facilitate deliveries of renewable energy generation from drainage-impaired lands of Westlands Solar Park to the state electrical grid.

Project Objectives of the WSP Master Plan

The major goals articulated above encompass the following specific objectives of the WSP Master Plan:

- Generate approximately 2,000 megawatts of clean, renewable electrical power utilizing solar photovoltaic (PV) technology and to deliver the electrical output to the State's electrical grid. (The estimated overall generating capacity for WSP could increase with improvements to solar PV module efficiency during the course of the buildout period for WSP.)

- Contribute to the solution of area-wide agricultural drainage problems by retiring all of the lands within the WSP plan area and providing productive reuse of those lands for renewable energy production as an alternative to irrigated agriculture.

- Provide for the economically viable and environmentally beneficial reuse of the WSP plan area's physically impaired agricultural soils.

- Contribute to the reduction in overdraft of the aquifer for supplemental irrigation.

- Reduce cumulative salt loading to the groundwater resource.

- Constructively address the chronic shortage of surface water deliveries by removing the least productive farmland from irrigation by imported water, and by facilitating the redirection of scarce surface water allocations from the WSP plan area to more productive agricultural land within Westlands Water District that is not physically impaired by saline soils, high groundwater, or high selenium or other mineral concentrations. (This applies only to the privately-owned western half of the WSP plan area. The WWD-owned lands in the eastern half of the WSP plan area have already been retired from irrigated agriculture.)

- Provide utility-scale power generation on physically-impaired farmland in order to reduce pressure for renewable energy development on prime agricultural soils elsewhere.

- Provide for development of utility-scale solar generation facilities on highly disturbed lands which provide minimal habitat value for wildlife.

- Provide a low-impact alternative location for the siting of utility-scale renewable energy development that might otherwise occur on lands with high habitat value for protected wildlife species (such as the Mojave Desert).

- Provide utility-scale solar generation in a location that is already served by high-voltage transmission lines.

- Help implement the State's goal of increased electrical generation to 50 percent with renewable resources by 2030 under California's Renewables Portfolio Standard (RPS).

- Help implement the California Renewable Energy Transmission Initiative (RETI) by providing for the development of up to 5,000 MW of the solar resource within the Westlands CREZ. (It is noted that the Westlands CREZ received the highest state-wide environmental ranking among all CREZs designated through the RETI process.)

- Contribute to overall reduction in greenhouse gas emissions by generating electricity that is not based on the combustion of fossil fuel, pursuant to The California Global Warming Solutions Act (AB 32), as extended and supplemented with SB 32 in 2016.

- Create new employment opportunities for local residents.

- Positively contribute to the local economy through stimulation of economic activity such as creation of secondary multiplier employment and the purchase of materials and services.

- Provide community benefits through increased property tax and sales tax revenues.

Project Objectives of the WSP Gen-Tie Corridors Plan

The objective of the WSP Gen-Tie Corridors Plan is as follows:

- Provide delivery of renewable solar power from the Westlands Solar Park to the State's electrical grid while minimizing impacts to the environment.

2.3. DESCRIPTION OF WESTLANDS SOLAR PARK MASTER PLAN

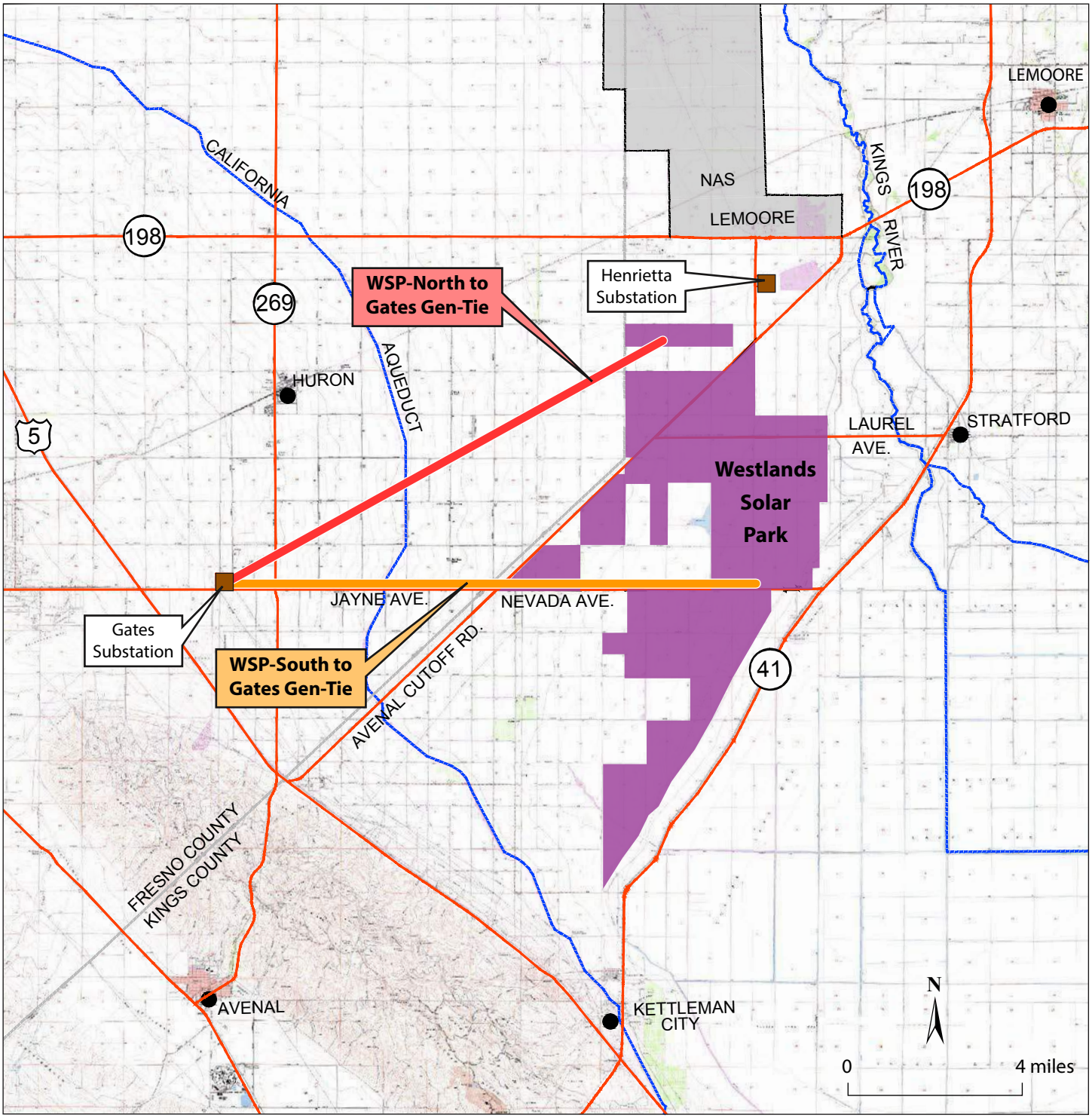
2.3.1. SETTING

Regional Setting

The Westlands Solar Park is located in west-central Kings County in the southern San Joaquin Valley (see Figure PD-1). The WSP plan area and the surrounding region consist of very sparsely settled rural land characterized by large-scale agricultural operations. The terrain is virtually level, and the dominant elements of the landscape are irrigation canals and ditches, scattered rural residences and ranch complexes, high-voltage transmission lines, the California Aqueduct, State highways, and County roads (see Figures PD-2 and PD-3). The nearest inhabited and urbanized areas include: Naval Air Station (NAS) Lemoore (2 miles north), City of Lemoore (5.5 miles northeast), Hanford (12.9 miles northeast), Stratford (2.5 miles east); Kettleman City (2 miles south), Avenal (8.75 miles southwest), and Coalinga (20 miles west), and Huron (9 miles west)

The major transportation routes in the WSP region include: Interstate 5 which runs along the base of the Coast Ranges at a distance of 2 to 9 miles west; State Route 198, an east-west highway that runs parallel to the WSP boundary 2 miles to the north; and State Route 41 which runs parallel to the southeast WSP boundary. Local transportation access is provided by Avenal Cutoff Road which bisects the WSP diagonally and provides primary vehicular access to and through the WSP and provides connections to the Cities of Lemoore and Hanford to the northeast and to I-5 and the community of Avenal to the southwest. The WSP is bisected from east to west by Nevada Avenue which connects SR-41 to Avenal Cutoff Road, and continues westward in Fresno County as Jayne Avenue providing access to I-5 and the City of Coalinga. Laurel Avenue traverses the northern portion of the WSP plan area in an east-west direction and provides a connection between Avenal Cutoff Road and SR-41 and the community of Stratford located 2.5 miles east. Gale Avenue is a County Road in Fresno County which commences westward from Avenal Cutoff Road and connects to SR-269 which runs in a north-south direction and provides access to the community of Huron to the northwest of the WSP.

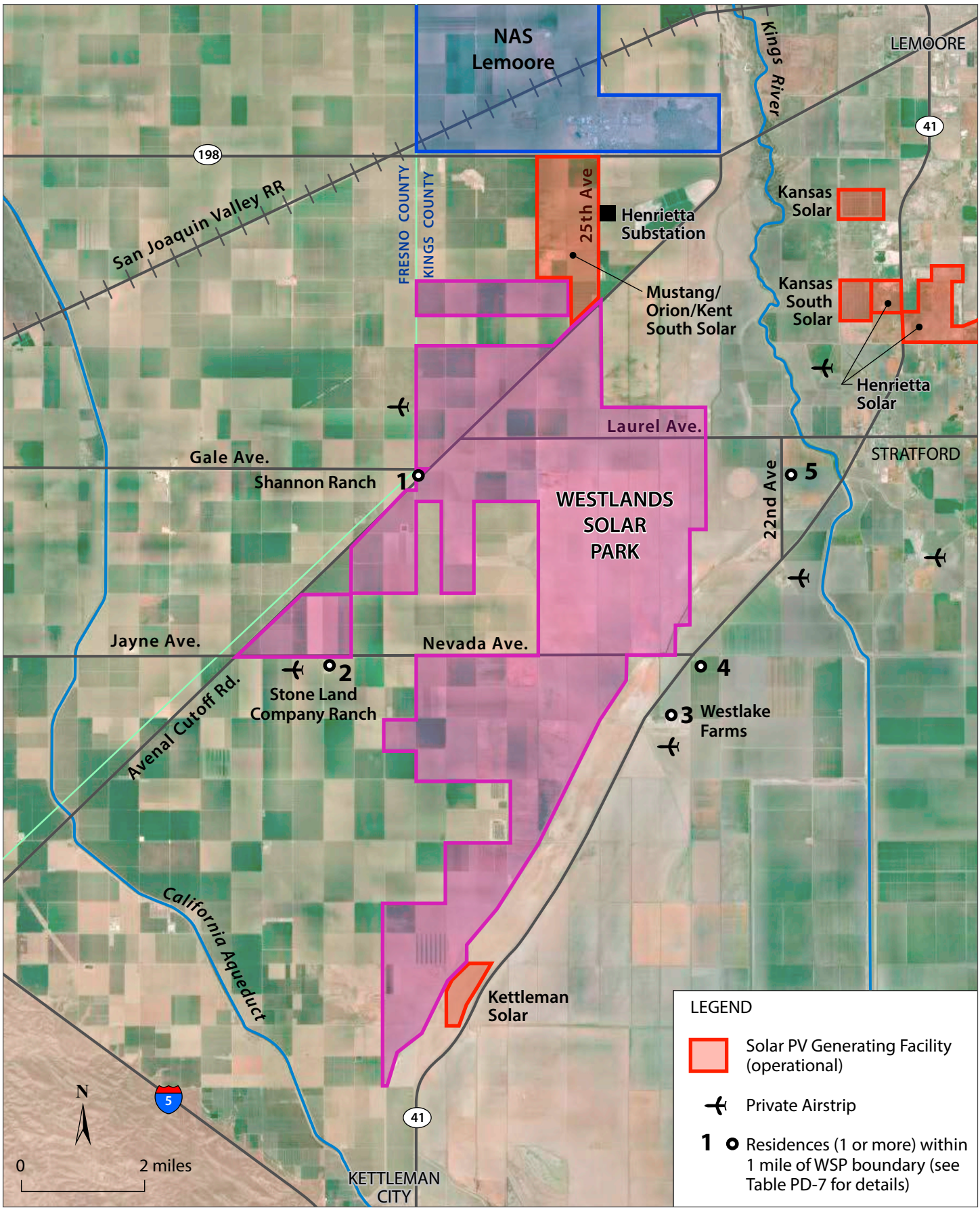
Other major features in the region include: the California Aqueduct, which runs roughly parallel to and east of I-5 at a distance of 3 to 6 miles from the WSP; the Kings River, which flows in a general north-south direction approximately one to two miles east of the WSP; and the Tulare Dry Lakebed, which is situated entirely on the southeast side of State Route 41, at least one mile southeast of the WSP. Other features of note in the area include PG&E's Gates Substation located 7 miles west of the WSP on Jayne Avenue between I-5 and the California Aqueduct, and PG&E's Henrietta Substation and the adjacent GWF natural gas peaker plant which are located one mile north of the WSP on 25th Avenue between Avenal Cutoff Road and SR-198.



WSP Vicinity

Figure PD-2

This page intentionally left blank



Base map: Google Earth, 2016

WSP Vicinity - Existing Land Use

Figure PD-3

This page intentionally left blank

Major power transmission lines in the vicinity include: a 230-kV line connecting the Gates and Henrietta substations: a 70-kV sub-transmission line running from the Henrietta Substation in the north to the Tulare Lake Substation in the south: and the Path 15 Transmission Corridor which consists of several 500-kV and 250-kV lines running generally parallel to Interstate 5.

Description of WSP Site and Adjacent Lands

WSP Site Conditions

The WSP plan area consists almost entirely of cultivated agricultural land on virtually level terrain. There are no dwellings or agricultural buildings within the WSP plan area. The primary crops grown on WSP lands include wheat, pistachios, almonds, cotton, tomatoes, onions, and alfalfa. Apart from agricultural fields, the main physical features within the plan area include agricultural infrastructure such as irrigation canals, ditches, ponds, turnouts, and pumps, as well as groundwater wells and standpipes.

The WSP is traversed by three improved County Roads including Avenal Cutoff Road, Laurel Avenue, and Nevada Avenue, in addition to shorter segments of other County roads. The road rights-of-way include utility pole lines, and two high voltage (230-kV) transmission corridors pass through the northwest corner of the WSP plan area in a northeast-southwest direction.

There is an active natural gas pipeline, owned and operated by Southern California Gas Company, that runs parallel to and southeast of Avenal Cutoff Road through the WSP plan area. A branch of the gas pipeline splits off at Laurel Avenue and runs eastward along the south side of Laurel to the community of Stratford.

In the northeast corner of the WSP, at Avenal Cutoff Road and 25th Avenue, there is 22 MW solar PV project (Westside Solar) approved by Kings County in 2015. The 2 MW first phase was completed in 2016, and the remaining 20 MW is planned for construction in 2018.

Surrounding Land Use

In addition to the land uses described above, the lands surrounding the WSP site within a one mile radius consist almost entirely of cultivated agricultural land with several ranch complexes, few scattered rural dwellings, and several newly constructed solar PV generating facilities (see Figure PD-3).

Ranch Complexes

There are 4 ranch complexes within one mile of the WSP boundary. The nearest and largest is the Shannon Ranch, located just off-site to the west, at the intersection of Avenal Cutoff Road and Lincoln/Gale Avenue. This ranch consists of 20 single-family dwellings, a ranch office, a machine shop, and various other outbuildings and structures. The Shannon Ranch also includes a private airstrip located to the north of Gale Avenue just east of the Fresno County boundary.

The second ranch complex is the Stone Land Company Ranch located on the south side of Nevada Avenue directly opposite the WSP boundary and approximately 1.5 miles east of Avenal Cutoff Road. This ranch includes two dwellings, a private airstrip, and a number of operations buildings.

The third ranch complex is the Westlake Farming Company complex located on the west side of SR-41, south of Nevada Avenue. This complex includes 4 dwellings and a number of operations buildings.

The fourth ranch complex is an unnamed ranch located about 1 mile southeast of WSP at the southeast corner of SR-41 and Nevada Avenue. This complex includes 2 dwellings, a number of operational buildings, and a private airstrip.

Rural Residences

Apart from the ranch complexes described above, the lands surrounding the WSP are sparsely settled, with very few rural dwellings located in the WSP vicinity. The nearest existing rural dwellings are 6 residences located along and near 22nd Avenue which runs north-south approximately one mile east of the eastern WSP boundary.

In summary, there are 34 existing rural residences located within an approximately 1 mile radius of the WSP plan area, including 28 dwellings associated with 4 ranch complexes, and 6 rural residences.

Existing Solar PV Generating Facilities

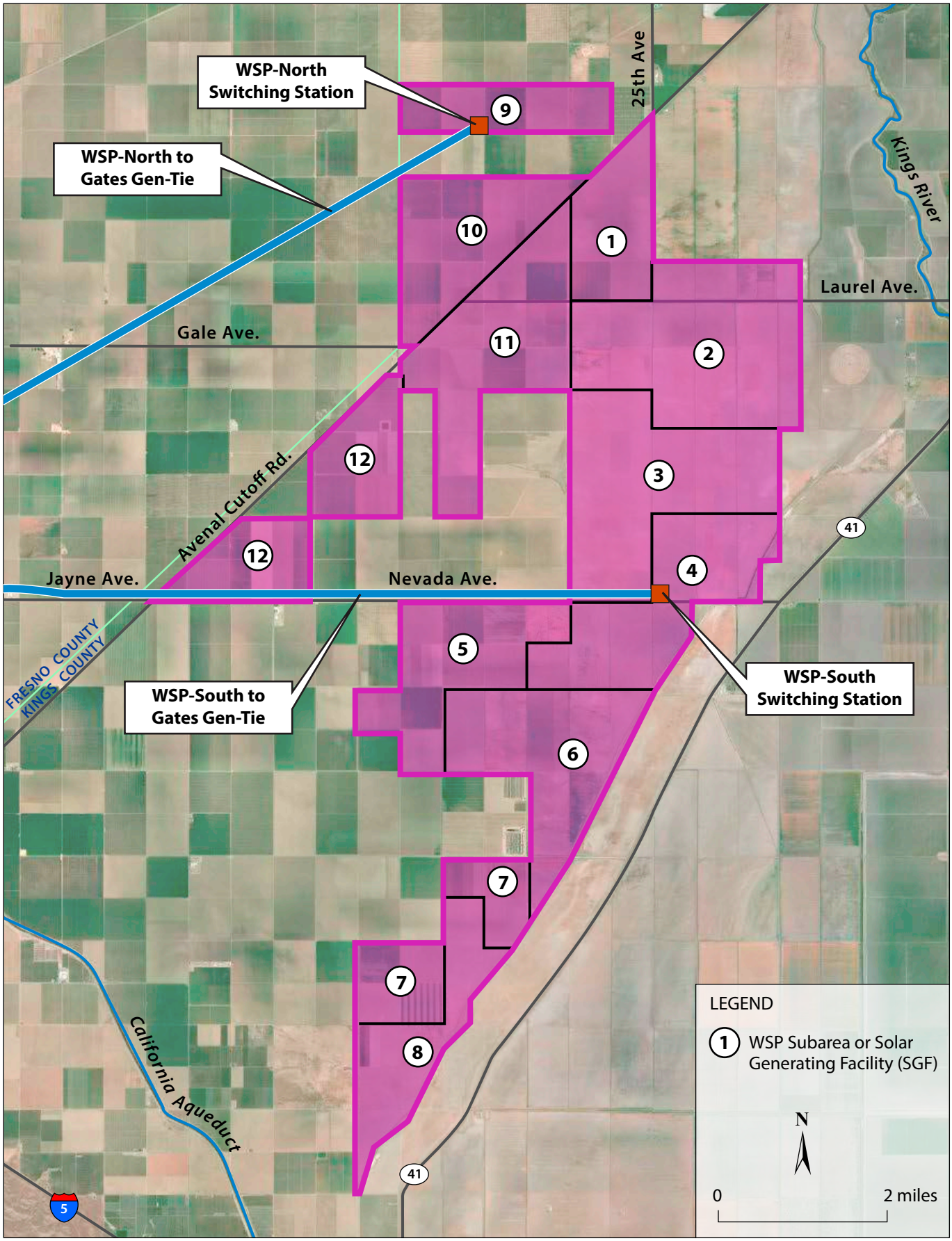
There are four solar generating facilities that are complete and operational within 1 mile of the WSP plan area. Immediately to the north along 25th Avenue are three Recurrent Energy projects (Mustang, Orion, and Kent South) totaling 200 MW on 1,822 acres. The fourth completed solar project (Kettleman – 20 MW) is located on 220 acres on the west side of SR-41 immediately southeast of the southern-most portion of the WSP plan area, approximately 3 miles north of Kettleman City. There are three additional completed solar facilities located between 2.5 and 5 miles east of WSP. These include the 20 MW Kansas and 20 MW Kansas South solar projects, located approximately 2.5 and 4 miles northeast, respectively, and the 136 MW Henrietta solar project which is located adjacent to SR-41 approximately 3 miles northeast of the WSP plan area (see Figure PD-3).

Other Surrounding Land Uses

Other notable land uses within 1 mile of the WSP plan area include: the Omaha Ranch, a dairy operation located on Omaha Avenue west of SR-41; and a vacant tomato processing plant located 0.4 miles north of WSP along 25th Avenue.

2.3.2. WESTLANDS SOLAR PARK MASTER PLAN

The Westlands Solar Park is planned for a series of utility-scale solar photovoltaic (PV) energy generating facilities comprising approximately 21,000 acres in west-central Kings County (see Figure PD-4). The WSP lies entirely within the Westlands Competitive Renewable Energy Zone (CREZ), as identified through the Renewable Energy Transmission Initiative (RETI) which determined that this zone has the potential to generate up to 5,000 Megawatts (MW) of renewable energy. (See "Statewide Renewable Energy Planning" above.) The WSP Master Plan provides a planning framework for the development of the renewable solar energy resource within the Westlands CREZ. The total peak generating capacity of WSP is estimated to be approximately 2,000 MW, based on an assumed development intensity of PV solar facilities of about 10 gross acres per MW. This estimated capacity may increase with improvements in solar PV efficiency over the course of the WSP buildout period. The installation of solar generating facilities is planned to occur incrementally over an approximately 12-year buildout



Base map: Google Earth, 2016

Westlands Solar Park Master Plan

Figure PD-4

This page intentionally left blank

period extending from about 2018 to 2030, with the installation rate of about 167 MW per year, on average. The development of WSP is planned to occur through the private development of individual solar projects of varying sizes, with the largest solar facility anticipated to have a 250 MW generating capacity. The Master Plan provides for several substations situated throughout the WSP for the purpose of stepping up generated power to a transmission voltage of 230-kV.

The WSP Master Plan is divided into 12 subareas, and for planning purposes it is assumed that each of these subareas will be developed as a solar generating facility (SGF). These subareas/SGFs are listed in Table PD-1 and their locations are shown in Figure PD-3. The subareas range in size from approximately 930 acres to 3,160 acres, and the electrical generating capacity for the corresponding SGFs ranges up to 250 MW. Some subareas may be developed with single solar generating facilities, while other subareas may be divided into smaller units of solar development.

TABLE PD-1

WSP SUBAREAS/SOLAR GENERATING FACILITIES

Subarea/SGF [See Fig. PD-3]	**Acres**	**MW**
1	1,059	90
2	3,160	250
3	2,565	250
4	1,956	150
5	1,612	170
6	2,008	200
7	1,109	110
8	1,151	120
9	931	100
10	1,544	160
11	2,117	220
12	1,726	180
Total WSP	**20,938 ac.**	**2,000 MW**

The Master Plan does not include a formal phasing plan, recognizing that the location and timing of individual solar projects within WSP will depend on market conditions and technical factors, including the scheduling of interconnection to the electrical grid and the construction of internal collection and external transmission facilities.

The primary purpose of the WSP Master Plan is to provide for the rational and orderly solar development within the WSP plan area. At the same time, the Master Plan is intended to remain adaptable in response to evolutionary refinements to solar technologies and generating systems. The Plan should be viewed as a general and flexible framework for accommodating individual solar projects, and not a prescriptive plan as to form, phasing, or scheduling of solar development.

WSP SOLAR GENERATING FACILITIES (SGFS)

Overview

Individual solar generating facilities within WSP will be developed as private developments under the overall Master Plan. The size of individual SGFs developed within WSP is expected to range from 20 MW to 250 MW. While there likely will be no standard sized solar facility that would be typical of WSP solar development, a 250 MW solar facility was identified as the typical large facility for purposes of this EIR analysis. The selection of a relatively large solar facility to represent a typical project allows for the identification and evaluation of reasonable worst-case impacts associated with individual solar development projects within WSP.

For Master Planning purposes, it is assumed that the average intensity of solar facility development throughout WSP will be about 10 gross acres per MW. While land requirements for solar arrays themselves would be less, this factor recognizes additional land requirements for supporting infrastructure such as operations and maintenance (O&M) facilities, power storage systems, substations, internal power collection and transmission corridors, and maintenance access driveways, as well as existing physical features that need to be accommodated such as natural gas pipeline easements, irrigation canals and ditches, and irregular site boundaries. Thus the intensity of solar development within some solar facilities may be less than one MW per 10 acres, while facilities on sites with more physical constraints may require more than 10 acres per MW.

Solar PV generating facilities are modular in design, with the basic building block consisting of individual solar arrays consisting of rows of solar modules with a combined generating capacity ranging from 250 kW to 750 kW per array (see Figure PD-5a). The arrays are combined to form larger units of 1 to 3 MW called solar blocks. For large-scale utility applications, hundreds of solar blocks are interconnected as part of a solar power generating facility. Each solar block is served by inverters, which can be located centrally or distributed within the array footprint. The inverters convert the direct current (DC) power to alternating current (AC), which is then conveyed to a centrally located transformer and switchgear which steps up the voltage to 34.5-kV or other collection voltage. Within WSP, the collected power is planned to be conveyed to a substation within each solar generating facility, which would step up the collection voltage to 230-kV for delivery to the grid via WSP gen-tie lines.

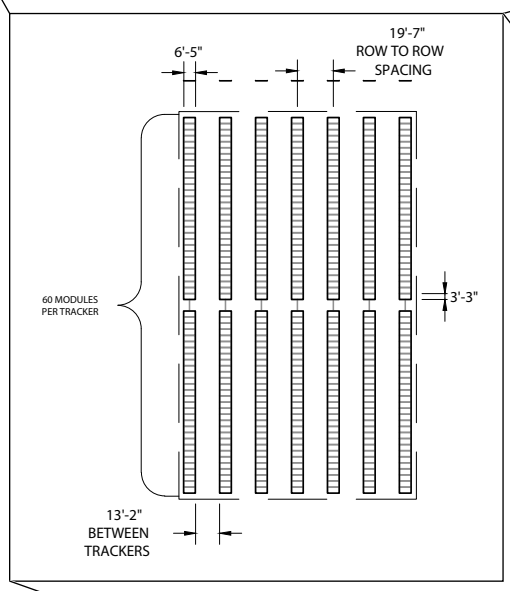
(In this EIR, several terms are used interchangeably to refer to individual solar PV generating facilities to be developed within WSP. These terms include: “solar project,” “solar development,” “solar facility,” or “solar generating facility,” or in abbreviated form as “SGF.”)

The main operational components of the WSP solar projects will include: solar PV systems, electrical infrastructure, support facilities, power storage systems, substations and interconnections. A detailed description of each of these operational components is provided below.

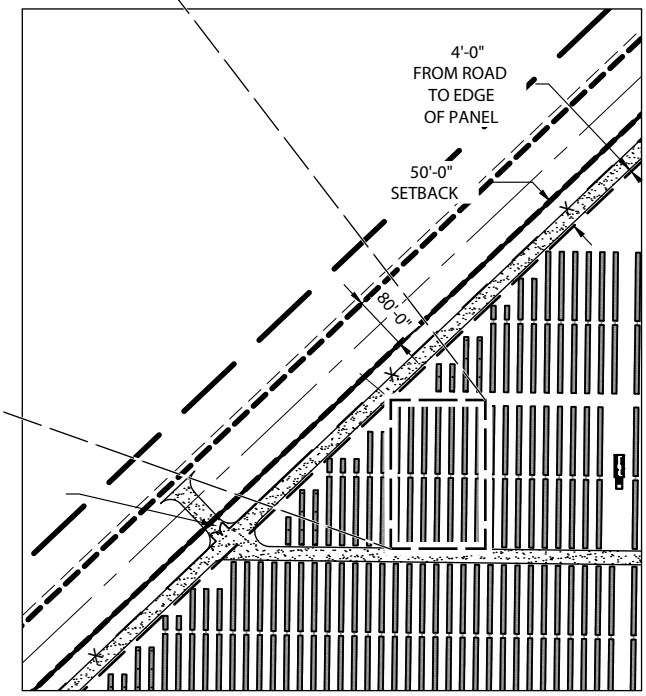
Solar Photovoltaic Systems

Photovoltaic (PV) cells convert sunlight directly into electricity. This involves the conversion of light (photons) to electricity (voltage) in a process known as the “PV effect.” The direct conversion of sunlight to electricity involves no moving parts. It also does not require water to generate electricity as with solar thermal systems where focusing mirrors are used to heat a water-based solution to create steam for power generating turbines.

Solar PV Modules on Horizontal Trackers



Typical Solar Array



Typical Plan Detail

Typical Solar PV Array

Figure PD-5a

This page intentionally left blank

There are two types of solar PV technology that are anticipated to be employed by the WSP solar projects. These include flat plate modules composed of mono- or polycrystalline silicon cells, and thin-film modules made up of layered semi-conductor cells. All PV cells are dark in color in order to maximize absorption and minimize reflectance of sunlight.

The solar cells are arranged in flat panels or modules which vary by size depending on the manufacturer. The modules are mounted in rows onto metal frames called tables or racks which in turn are mounted on support posts or piles driven into the ground. The racking systems can either be set at a fixed angle or connected via a drive motor that allows the tracking units to follow the sun in a single axis in order to capture more sunlight.

It is expected that solar facilities within WSP will utilize one of two main PV collection systems. These include the "horizontal tracker," and "fixed tilt" systems, as described below.

Horizontal Single-Axis Tracker Systems

The horizontal tracker system consists of solar arrays mounted on motorized tracking systems that allow the panels to rotate from east to west to follow sun throughout the day. The horizontal tracker system can include either crystalline silicon or thin-film solar panels with racking systems which are mounted horizontally (parallel to the ground), and with the rows oriented in a north-south direction. The racking systems would be mounted on long galvanized steel posts, consisting of either cylindrical pipes or I-beams (also known as H-beams or W-beams). The posts are approximately 4 inches in diameter and are hydraulically driven into the ground to depths of 6 to 10 feet.

When the solar modules are in a flat horizontal position, the modules would be 4 to 5 feet from the ground surface. When the solar panels are tilted at the highest angle (about 60 degrees from horizontal) during the early morning and evening hours, the lowest point on the solar modules would be at least 3 feet above the ground surface, and the highest point (i.e., the leading edge of the uppermost solar panel) would be approximately 8 to 10 feet above the ground surface.

The long north-south rows of solar panels would be about 6 to 8 feet wide and would be spaced approximately 10 to 20 feet from adjacent parallel rows in order to avoid the panels casting shadows on each other, especially when the sun is lower in the sky.

Fixed-Tilt Systems

Fixed-tilt systems are very similar in appearance to horizontal trackers, except that they are ranged in east-west oriented rows. The fixed-tilt systems do not track the path of the sun, but are instead permanently tilted upward toward the south to receive optimal solar energy. Fixed-tilt panels are tilted at about 20 degrees from horizontal. The lowest point on the solar modules would be at least 3 feet above the ground surface, and the highest point (i.e., the leading edge of the uppermost solar panel) would be approximately 5 to 7 feet above the ground surface.)

The long east-west rows of solar panels would be 8 feet wide and would be spaced approximately 8 feet from adjacent parallel rows in order to avoid the panels casting shadows on each other.

Summary

Currently, the horizontal single-axis tracker system is considered to produce optimal solar generation at WSP, and is therefore considered to be the primary system that would likely be installed in the initial stages of solar development. For planning purposes, the WSP Master Plan was prepared based on the use of horizontal trackers as the PV prototype system throughout WSP. Nevertheless, due to the similarity in overall physical characteristics among the two PV system types, the impact analyses contained in this EIR are also applicable to solar development projects which utilize the fixed-tilt systems. Thus, at programmatic level, this EIR is intended to provide CEQA review for both of the above-described PV system types within WSP.

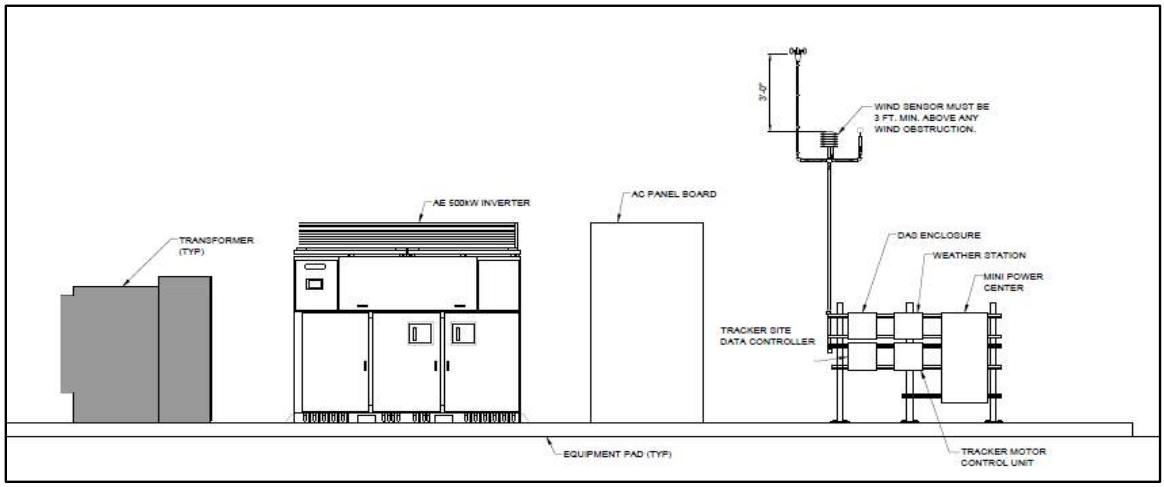
While other PV systems may be emerge as technology advances over time, it is expected that the overall physical characteristics will not vary significantly from the PV systems described above. Therefore, the environmental effects of such PV systems are not expected to be substantially different from those described above.

Other forms of solar power generation, such as parabolic trough and solar power tower, do not utilize PV modules but use solar energy reflected from mirror arrays to heat water or other media to generate steam and drive generation turbines. These solar thermal systems are substantially different from PV systems in terms of physical appearance, land requirements, and water demands, among other things. As such, the environmental effects of such systems vary substantially from the effects associated with PV solar systems. These non-PV solar generating systems are not planned for WSP, and therefore this EIR does not evaluate the environmental effects associated with such systems.

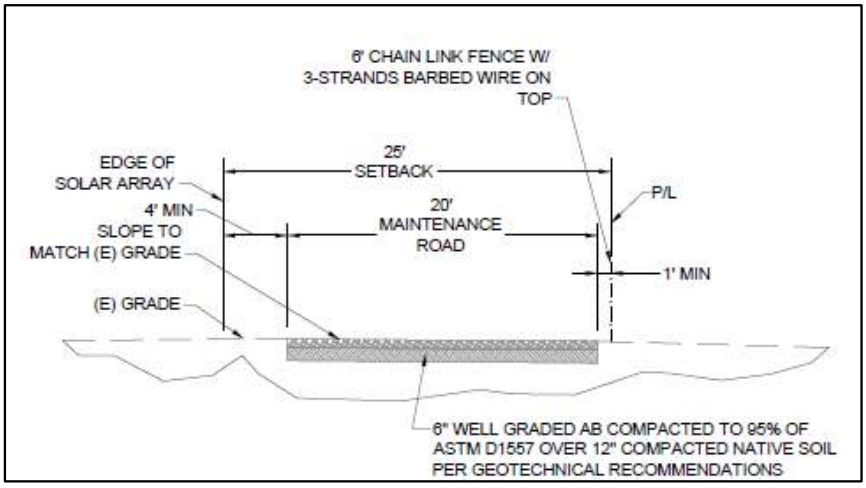
Power Collection and Storage

Power Collection

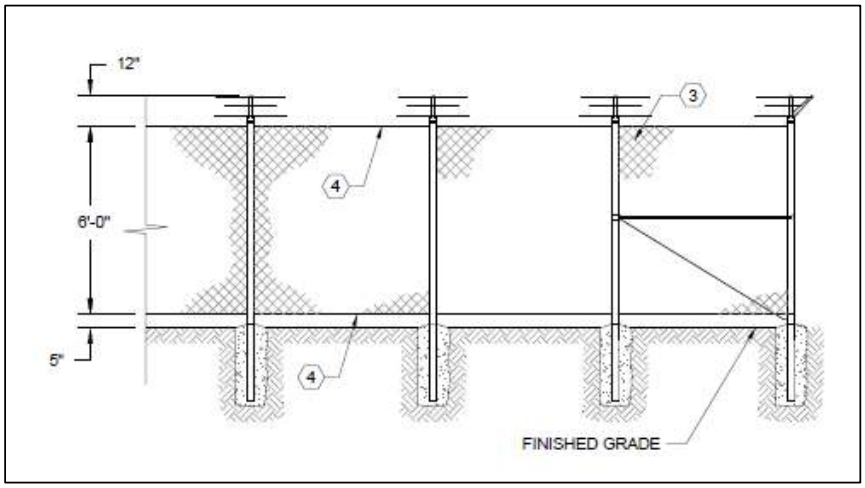
The PV modules would be electrically connected by wire harnesses and combiner boxes that collect DC (direct current) power from each PV block or array and deliver it via underground cables to a Power Conversion Station (PCS) which would be centrally located within each array. Each PCS would include an inverter and transformer (see Figure PD-5b) which would serve solar blocks comprising 1 to 3 MW of power generation. The inverter would convert the DC electrical output from the modules to grid-quality AC (alternating current) output. The transformer would then step up the generated power to a medium collection system voltage, typically 34.5 kilovolts (kV). The inverter and transformer are often housed together on a 6- to 8-inch thick concrete pad measuring up to 15 by 50 feet. The buried collection lines would connect a series of transformers through trenches (approximately 3 feet wide and 3 feet deep) leading to PV combining switchgear (PVCS), which can accommodate 20 to 30 MW and would be centrally located to serve the respective blocks and feed the substation within the SGF. The power output from the PVCS would then be conveyed to on-site substations located within each SGF via high-capacity overhead circuits. These on-site overhead lines are typically mounted on wooden poles approximately 50- to 60-feet tall and up to 14 inches in diameter, and spaced about 250 feet apart. Within each SGF, a substation would step up the collected power to 230 kV, which would then be delivered via the WSP gen-ties to Gates Substation for interconnection to the state power grid, as described later in this section.



Inverter/Transformer Pad



Internal Gravel Maintenance Road



Perimeter Fence

Typical Solar Facility Details

Figure PD-5b

This page intentionally left blank

Power Storage Systems

Due to the intermittent nature of PV solar generation, the integration of solar generation into the statewide grid presents challenges for power dispatching. In order to provide for more effective integration of solar power into the grid, the operators of utility-scale solar facilities are increasingly including energy storage systems into their facility plans. It is expected that SGFs within WSP will incorporate energy storage systems into their facilities. Typical systems would consist of battery, fuel cell, and or compressed air systems in enclosures measuring approximately 40 feet by 10 feet by 9 feet high placed on concrete foundations. The storage enclosures could be dispersed throughout the sites or concentrated in specified locations. The amount of power storage included in a particular solar facility would vary depending on project requirements. A typical 250 MW solar facility may include up to 15 acres for storage facilities to provide up to 250 MW of storage; thus, storage facilities would occupy well under 1 percent of the typical SGF site area.

Support Facilities

Operation and Maintenance (O&M) Buildings

The typical 250 MW solar facility would include an O&M building to house security and operational monitoring systems, and to provide for storage of parts and supplies. It may also include a lunchroom/breakroom, restrooms, and a small office area. The O&M building would consist of a prefabricated building set on concrete slab-on-grade, and would have an enclosed floor area of about 2,000 to 3,000 square feet, and a maximum building height of about 20 feet. The facility would include an operations yard for storage for operational equipment, vehicles and materials, and would include parking and maneuvering areas for staff vehicles, delivery trucks, and service vehicles. The O&M facility would be located within an operations yard covering area of about 1 acre. For smaller solar facilities constructed within WSP, the O&M facilities would be smaller.

Small quantities of potable water would be required at the solar facilities for drinking and other uses. Potable water would be delivered by a water delivery service, or would be brought to the site by workers. Domestic wastewater disposal would be provided by a septic tank located within the O&M site. The tank would have a capacity of approximately 2,000 gallons and would be emptied as needed by a contracted wastewater service vehicle. For smaller solar facilities the sanitary needs of workers visiting the solar facilities for maintenance activities may be provided by portable chemical toilets that would be serviced by a private contractor. The use of septic leachfields for on-site wastewater disposal is not expected to be needed or proposed for any SGF within WSP.

Project Entrances and Internal Gravel Driveways

Each solar generating facility within WSP would be served by its own entry driveway which would provide access to its O&M facility and solar fields. Each solar facility would have a main gated entrance on a County road, such as Avenal Cutoff Road, Laurel Avenue, or Nevada Avenue. The project entrances would be designed and constructed in accordance with the Kings County Improvement Standards.

As required by Kings County for all solar projects, permanent access within each SGF would be provided primarily by internal gravel driveways which would also run along the site perimeter of each project phase. The internal gravel driveways would be about 20 feet wide to allow passage of emergency and maintenance vehicles, and would be spaced per Kings County Fire Department standards. The internal

gravel driveways would be designed and constructed to have a continually durable dust free surface, in accordance with the Kings County Improvement Standards, and would be permeable to allow percolation of rainfall into the underlying soil.

Perimeter Fencing

The perimeter of each SGF phase would be securely fenced and gated to prevent unauthorized access. Fencing would consist of 6- to 7-foot high chain-link galvanized metal perimeter fences topped with standard three-strand barbed wire (see Figure PD-5b). Additionally, a slack wire may be installed above the barbed wire as an anti-perch device. Fence posts would be driven into the soil profile using truck mounted vibratory drivers. All fence posts would be capped to prevent the entrapment of small birds. Vehicle access gates would be installed at the site entrances on public access roads; these gates would remain locked when not in use to the extent allowed by local ordinance.

Fencing for each SGF would include a continuous 5-inch gap between the bottom of the fence and the ground surface for all fencing in order to allow unimpeded passage of kit foxes and other small wildlife.

Signage

SGF signage would consist primarily of identification signs at the project entrances, and safety signage at electrical equipment. During the construction phases, temporary directional signage would be employed as needed. All signage would conform to the sign standards of the Kings County Zoning Ordinance.

Exterior Lighting

Lighting for the solar facilities would be designed to provide minimum illumination for safety and security while avoiding direct light spillover onto public roadways or adjacent properties. Permanent exterior lighting would be installed at the facility entrances, the O&M facilities, and the substations/switching stations. Lighting systems would be light-activated to automatically come on in the evening and shut off in the morning. Lighting within the solar fields would be confined to the inverter/transformer pads, and would be activated only when needed by switch or motion sensors. There would be no lighting along any internal access driveways, or around the facility perimeters. Light fixtures would be shielded and focused downward and toward the interior of each SGF site.

Telecommunications

Each SGF would include a Supervisory Control and Data Acquisition (SCADA) system to provide remote monitoring of facility operation and remote control of critical components. Within each SGF, the solar arrays would be connected by fiber optic or other cabling that would be installed in buried conduit leading to a SCADA system cabinet at the O&M facility. The SCADA systems would be connected to local telecommunications service via overhead lines or buried lines. Telecommunications may also be transmitted wirelessly.

Meteorological Stations

Each SGF phase would include one or more meteorological monitoring stations ("met" stations) to record key data such as insolation (incident solar radiation), air temperature, precipitation, wind direction and speed, and relative humidity. The met stations would collect meteorological data from about 11-14 feet above the ground, or about 3 feet above the maximum height of nearby equipment, to allow for accurate wind readings.

Substations, Internal Gen-Ties, and Switching Stations

SGF Substations

As mentioned, each SGF within WSP would include an on-site substation where the collection voltage of the project-generated electricity would be stepped up to 230 kV. (Note: Smaller SGFs could share a substation at or near their common border. For purposes of this analysis, it is assumed that all SGFs would have their own substations.) Each substation would occupy 1 to 3 acres of land and would contain high-voltage transformers, switchgear, a control building, and related substation facilities (see Figure PD-5c). The substation equipment would range in height from approximately 12 feet (control buildings), to 35 feet (transformers), and 65 feet (dead-end structures, microwave towers). The substation sites would include concrete footings and foundation pads for substation equipment, and remaining area would be graveled. The high-voltage transformers would each contain approximately 5,000 gallons of dielectric fluid (mineral oil), and would be placed on concrete pads with concrete containment berms. The substations would each be enclosed by security fencing.

Internal WSP Gen-Ties

The power from the individual SGF substations would be delivered via a high-voltage gen-tie traversing the interior of the Westlands Solar Park. The internal WSP gen-tie corridors would consist of either steel lattice towers or tubular steel monopoles between 100 and 150 feet high. The routing of the internal WSP gen-ties would be established subsequently when the sequencing of solar development is determined and site plans for the individual SGFs are prepared. The internal gen-tie line would connect to the external WSP gen-tie lines described below, which would deliver the generated power to the Gates Substation. Although not currently anticipated, it is possible that interconnection to the State grid could occur at the WSP site, in which case one or more switching stations would be included within WSP, as described below.

PG&E Switching Stations

It is possible that up to two 230 kV switching stations could be constructed to serve the WSP plan area in the event that a public utility were to operate one or both of the WSP gen-ties connecting WSP to Gates Substation. If so, one switching station would be located in the northwest portion of the plan area, and the other in the central area along Nevada Avenue. Each switching station would occupy approximately 5 to 10 acres, and would include control buildings, transformers, circuit breakers, dead-end structures, and busbars. The tallest structures would be dead end structures (typically 65 feet tall), and microwave radio towers up to 150 feet in height. The two switching stations would be connected to the State grid via the WSP gen-tie lines described in Section 2.4.

Interconnection to the Regional Electrical Grid

Electricity generated within WSP would be delivered to customers by the California Independent System Operator (CAISO or Cal-ISO), acting as a transmission provider, through the transmission system owned by Pacific Gas and Electric (PG&E). In order to obtain the right to connect to the CAISO grid, each WSP solar project must first apply for a queue position with CAISO through the Generation Interconnection Process (GIP). Next, the proposed generator must obtain Phase 1 and Phase 2 studies from CAISO, a process that typically takes two years. Finally, the proposed generator must obtain a Generation Interconnection Agreement (GIA) from CAISO.

2.3.4. CONSTRUCTION OF WSP SOLAR GENERATING FACILITIES

The Westlands Solar Park is planned to be developed as a series of individual PV solar projects over a period of about 12 years. As mentioned, these solar projects are expected to range in size up to 250 MW. A normal construction period for a typical 250 MW SGF would be about 2 years. It is expected that the overall pace of WSP buildout will be about 167 MW of generation per year, on average, although actual construction completed in any given year could range from 0 to 250 MW. It is likely that the construction periods for some SGFs would overlap. For purposes of presenting a reasonable worst-case analysis in this EIR, it is assumed that two SGFs of 250 MW each would have overlapping construction schedules. That is, the second construction year of the first SGF would overlap with the first year of the second SGF, such that no more than 250 MW would be constructed in any given year. (The details of this hypothetical scenario are described in Section *3.13. Traffic/Transportation*.)

The following is a detailed description of the construction process for a typical SGF to be developed within WSP. Where appropriate, the largest expected SGF of 250 MW is used to illustrate a typical large SGF. The completion of each WSP solar facility would involve three major construction stages, including: site preparation activities, installation of solar arrays and electrical components, and installation of substations, switching stations, and interconnection to the electrical grid via gen-ties. Each of these construction stages is described in turn below.

Site Preparation Activities

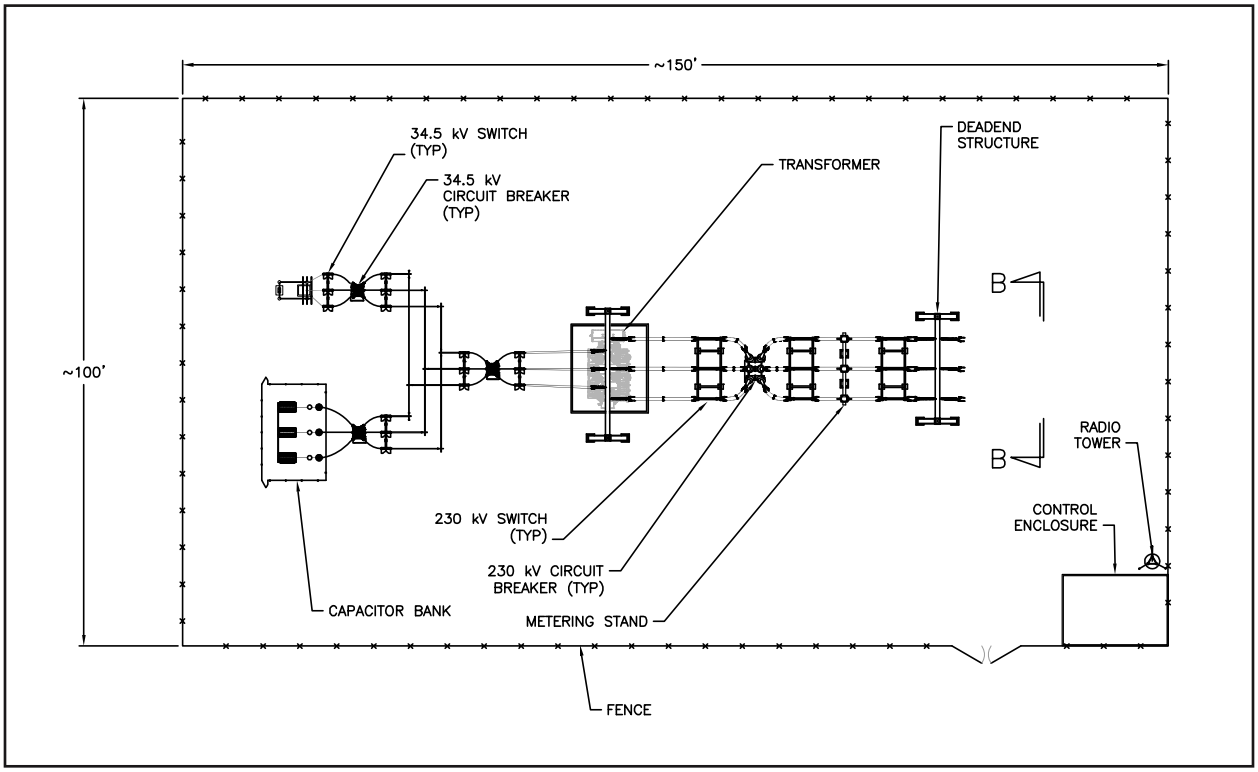
Pre-construction Activities

The site development process would begin with pre-construction activities such as surveying and staking for various project elements like internal driveways, PV array locations, electrical trenches, equipment pads, and support structures. The next step would be construction mobilization, which would include delivering initial equipment, supplies, and temporary construction trailers to the site.

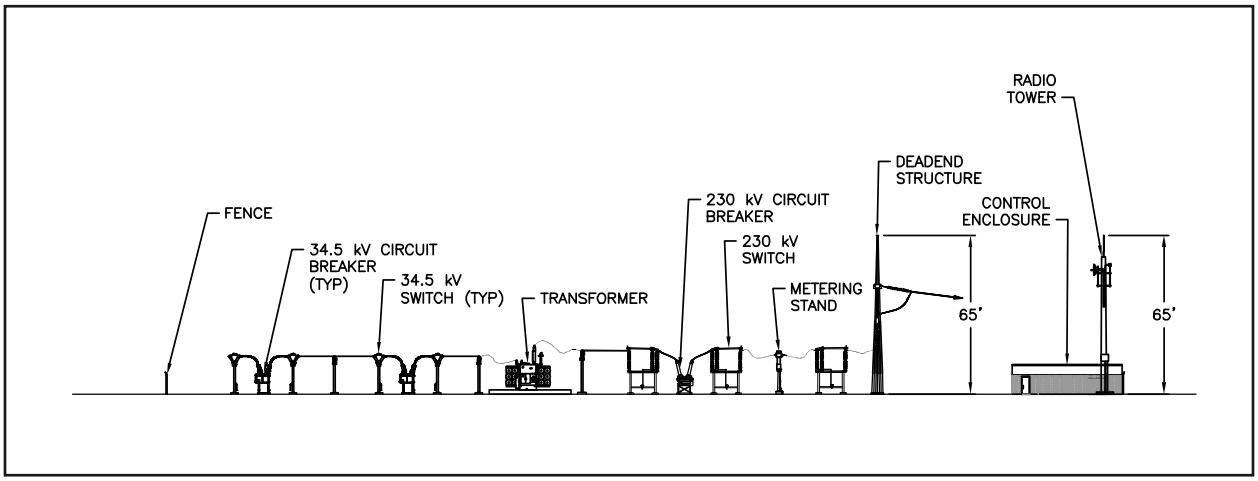
Site preparation activities that would occur prior to general construction within a given increment of solar development include: site clearing and grading, preparation of construction staging areas, and construction of the main internal driveways, as described below.

Clearing and Grading

Prior to facility construction, the site would be cleared of vegetation, and minimally graded and compacted. Grading would occur only for access roads and to smooth localized bumps in terrain.



PLAN VIEW



PROFILE

Typical 230-kV Substation

Figure PD-5c

This page intentionally left blank

Given the level terrain throughout the WSP plan area, no mass grading is planned or anticipated. Other areas of the each SGF site may be disced to a depth of 6 inches. Compaction would only occur at the equipment pads and along the internal driveways. Site clearing and soil preparation would occur incrementally as needed, and would not commence until a given area is needed for the next construction phase. Vegetative cover would be retained as long as possible to minimize exposed soils and reduce potential for erosion and wind-blown dust.

Since the existing ground throughout WSP is generally level, with only agricultural furrows creating minor terrain roughness, the solar development can be accommodated without large-scale grading. The existing topsoil would not be removed. Final grades would be designed to provide for positive drainage. Measures for erosion and sediment control would also be implemented, as described in "Stormwater Management and Erosion Control" below.

Construction Staging Areas

Each project phase within each SGF would include a temporary staging area for construction support. The staging areas would occupy one or two acres each, and would include construction offices, a first aid station, areas of worker parking, areas for equipment storage, cleaning, and maintenance, a truck unloading area, and an area for storing and assembling the PV systems prior to installation. Portable chemical toilets would provide for sanitary needs and bottled drinking water would be delivered to the site. The staging areas would require a power source for temporary lighting, which would either be supplied by portable generators or existing local power lines. The staging areas would be enclosed by security fencing. During construction, the staging areas may periodically be relocated within the SGF sites, to maintain proximity to ongoing installation areas.

Temporary Internal Driveways

Construction access through each SGF site would be provided by temporary all-weather driveways composed of native compacted soil and treated with dust palliative as needed. Temporary project entrances would be composed of gravel, and tire wash racks would be installed at the project entries for washing wheels of construction vehicles prior to exiting in order to avoid tracking of mud and sediment onto public roadways.

Installation of Solar Arrays and Support Facilities

Prior to installation of solar arrays, the perimeter of each SGF or SGF phase would be securely fenced and gated to prevent unauthorized access. Construction of the solar arrays would begin with installation of the cylindrical steel posts (or H-beams) which would be driven into the ground using truck-mounted vibratory drivers. The posts would be installed at approximately 10 foot intervals to depths of 6 to 10 feet, with actual depths depending on localized soil conditions and load factors. Next, the torque tubes and motor drivers for the single-axis trackers would be mounted on the installed posts in a north-south orientation. This would be followed by placement of pre-fabricated metal racking systems on the trackers, and finally installation of solar modules on the racking systems. (For SGFs with fixed-tilt systems, the racking systems would be mounted directly on the support frames and posts, without motor-driven tracker systems.)

Within each SGF, the internal access driveways would be 20 feet wide, and would be spaced per Kings County Fire Department requirements. The completed solar arrays would be spaced approximately 10

to 20 feet apart and would be 4 to 5 feet above the ground, when the modules are in their horizontal resting positions.

Trenching would occur along each array to bury the electrical cables connecting the modules to the inverters and transformers distributed throughout each SGF. The trenches would be approximately 3 feet wide and 3 feet deep and would be backfilled with native material after cables are laid. The electrical output from the PV modules would be collected as DC (direct current) in combiner boxes at each array and delivered via underground the cables to the inverters and transformers.

Construction of support and ancillary facilities such as O&M buildings, telecommunications, met stations, signage, and lighting would be installed concurrently with the solar arrays.

Construction of Substations, Internal Gen-Ties, and Switching Stations

Substations

Substations would be constructed to serve each SGF within WSP. The construction of each substation would be completed in approximately 10 to 12 months. Since the initial PV solar arrays in each SGF would begin generating power soon after completion, the substations would need to be constructed in conjunction the early SGF construction phases in order to deliver the generated power to the transmission grid. Substation sites would occupy approximately 1 to 3 acres and would be graded and compacted to approximately level grade. At each substation site, one or more concrete pads and footings would be constructed as foundations for the transformers, switchgear, control house, and steel support structures. Below- and above-ground electrical conduits would be installed. The major substation components (e.g., transformers, control house, etc.) would be assembled on-site and installed on their foundations. The remaining areas of the substation sites would be graveled and would include area for parking. A gated 6- to 8-foot high chain link fence would be constructed around each substation site.

Internal WSP Gen-Ties

For each SGF, a segment of internal gen-tie line would be constructed to interconnect the SGF substation to one of the two PG&E switching stations planned to serve WSP solar development. These gen-tie segments would be installed concurrently with each SGF substation in order to provide for transmission of power from the initially-constructed solar arrays in each SGF, which would be energized incrementally as they are completed. The gen-tie conductors could be strung on either steel lattice towers or steel monopoles depending on right-of-way availability and other factors. Footings for gen-tie poles would be excavated to depths of 20 feet for more. The transmission corridors for the gen-ties would be about 80 to 100 feet wide. The construction details for the internal WSP gen-ties would be similar to those described subsequently for the off-site gen-ties connecting the WSP switching stations to the Gates Substation.

PG&E Switching Stations

As mentioned, interconnection to the State grid could occur at the WSP plan area, although this is not currently anticipated. The points of interconnection would be at one or more switching stations to be constructed within the plan area. The construction of each switching station would begin with site grading, construction of concrete foundations, and installation of underground conduits. Then the switching station equipment would be installed and tested prior to commissioning. The remaining areas

of the switching station sites would be graveled. A gated 6- to 8-foot high chain link fence would be constructed around each switching station site.

Construction Workforce and Equipment

Workforce

During construction of each SGF, the number of workers would fluctuate depending on the construction stage. As shown in Table PD-2, the workforce numbers would be greatest during installation of the solar arrays, especially when this construction stage overlaps with the site preparation stage, when a workforce of 430 construction personnel would be on-site for construction of a typical 250 MW facility.

Typically, construction would take place between the hours of 7 AM to 5 PM, Monday through Friday, although it is expected that work would typically end by 4 PM daily. Work could take place outside these hours if needed to maintain schedules. For safety reasons, certain construction tasks, such as final electrical terminations, must be performed after dark when no energy is being produced.

The construction workforce would be largely drawn from the surrounding communities, with the possible exception of project management personnel. Based on a gravity model using population and distance factors for communities within commuting range, it was determined that the average round-trip commute length for construction personnel would be 90 miles. All workers would be encouraged to carpool. These trips would be distributed to communities throughout the region. (See Section *3.13. Traffic/Transportation* for a detailed discussion of project traffic generation and distribution.)

Construction Deliveries

The construction of the SGFs would involve the use of numerous pieces of construction equipment and support vehicles at various stages of construction. This would include grading and excavation equipment such as graders, dozers, compactors, trenchers, and backhoes; and general construction equipment like concrete mixers, asphalt pavers, cranes, hydraulic pile drivers, fork lifts, and water trucks. This equipment would be brought to the individual SGF sites when needed. When the pieces of equipment are not in use, they would be stored in designated staging areas for the duration of the activities for which they are needed.

Deliveries of solar modules and support structures, electrical components, concrete and aggregate would occur at various times during construction. The equipment and material deliveries would originate from various locations in central California and would follow designated truck routes to travel to the project site. It is anticipated that deliveries of solar modules, tracking systems, and major electrical components would originate from ports or distribution centers in the Bay Area and/or Southern California. It is anticipated that aggregate supplies would be obtained from the nearest source at Avenal Paving and Gravel located on Highway 33 between Avenal and Coalinga. Similarly, it is expected that concrete would be supplied from a ready-mix plant located outside Coalinga. All other construction deliveries are expected to originate from the Fresno area.

The estimated number of deliveries during all construction stages for a typical 250 MW solar facility is shown in Table PD-2. For the most intensive construction period, when the installation of solar arrays would overlap with the site preparation stage, the project would receive an average of 100 deliveries per day. Most construction deliveries would occur outside the morning and afternoon peak traffic periods.

TABLE PD-2

OFF-SITE CONSTRUCTION VEHICLE USAGE, BY CONSTRUCTION PHASE FOR TYPICAL 250 MW SOLAR FACILITY

Vehicles	**Estimated Usage**		
Phase 1 – Site Preparation *(210 work days or 43 weeks)*	**Units**	**Miles/Round Trip**	**Round Trips/Unit**
Water Trucks[1]	5	85	1
Flat Bed Trucks	12	85	4
Gravel Trucks (End Dump)(Delivery)	18	56	210
Equipment Transport Trucks (Delivery)	24	85	30
Worker Vehicles[2]	140	90	210
Phase 2 – Installation of Solar Arrays *(300 work days or 61 weeks)(Overlaps with Phase 1 for 65 work days or 13 weeks)*	**Units**	**Miles/Round Trip**	**Round Trips/Unit**
Water Trucks[1]	4	85	1
Freight Trucks (Delivery)[3]	19	400	275
Equipment Transport Trucks (Delivery)	7	85	10
Service Trucks	3	85	275
Worker Vehicles[2]	290	90	300
Phase 3 – Installation of Inverters, Transformers, Substation, Interconnection *(160 work days or 30 weeks)(Overlaps with Phase 2 for 85 work days or 17 weeks)*	**Units**	**Miles/Round Trip**	**Round Trips/Unit**
Water Trucks[1]	1	85	1
Ready Mix (Delivery)	3	50	250
Freight (Delivery)[3]	1	400	150
Equipment Transport Trucks (Delivery)	1	85	18
Worker Vehicles[2]	40	90	160

[1] Water trucks are anticipated to be filled with water from the existing agricultural wells in the vicinity.
[2] No carpooling or transit use is assumed for workers' traveling to and from WSP.
[3] Freight delivery includes solar modules, racking systems, support structures, and major electrical components, all of which are assumed to originate in equal portions from ports or distribution centers in the Bay Area or Southern California.

TABLE PD-3

ON-SITE CONSTRUCTION EQUIPMENT USAGE, BY CONSTRUCTION PHASE FOR TYPICAL 250 MW SOLAR FACILITY

Equipment	Estimated Usage		
Phase 1 – Site Preparation *(210 work days or 43 weeks)*	**Units**	**Hours/Day (5 days/week)**	**Days/Unit**
Water Trucks	5	7	210
Bulldozers	3	7	210
Graders	5	7	108
Compactors	1	7	42
Skid Loaders	1	7	188
Asphalt Pavers	1	4	28
Front-End Loaders	1	7	83
Phase 2 – Installation of Solar Arrays *(300 work days or 61 weeks)(Overlaps with Phase 1 for 65 work days or 13 weeks)*	**Units**	**Hours/Day (5 days/wk)**	**Days/Unit**
Water Trucks	1	7	154
Tractors – post drivers	2	7	245
Forklifts	6	7	220
Trenchers	9	4	245
Flat Bed Trucks	12	7	220
Phase 3 – Installation of Inverters, Transformers, Substation, Interconnection *(160 work days or 30 weeks)(Overlaps with Phase 2 for 85 work days or 17 weeks)*	**Units**	**Hours/Day (5 days/wk)**	**Days/Unit**
Water Trucks	1	7	140
Forklifts	2	4	140
Trenchers	1	4	144
Backhoes	1	4	158
Cranes	1	2	94
Aerial Lifts	1	6	94

Table PD-3 shows estimated usage of construction equipment during the three main construction stages for a typical 250 MW SGF.

The estimated number of construction deliveries for a typical WSP switching station is shown in Table PD-4. One of the switching stations would be constructed in the initial stages of WSP buildout in order to facilitate delivery of power from the first solar facilities once they are energized.

TABLE PD-4

OFF-SITE CONSTRUCTION VEHICLE USAGE FOR TYPICAL 230-KV SWITCHING STATION

Vehicles	Estimated Usage		
Duration – 170 work days	**Units**	**Miles/Round Trip**	**Round Trips/Unit**
Water Trucks[1]	1	85	1
Concrete and Gravel Delivery	9	56	18
Equipment Transport Trucks (Delivery)	4	85	6
Freight Trucks (Delivery)	4	400	85
Worker Vehicles[2]	6	90	170

[1] Water trucks are anticipated to be filled with water from the existing agricultural wells in the vicinity.
[2] No carpooling or transit use is assumed for workers traveling to and from WSP.

Table PD-5 shows the estimated equipment usage for construction of each of the two WSP switching stations.

TABLE PD-5

ON-SITE CONSTRUCTION EQUIPMENT USAGE FOR TYPICAL 230-KV SWITCHING STATION

Equipment	Estimated Usage		
Duration – 170 days	**Units**	**Hours/Day (5 days/wk)**	**Days/Unit**
Water Truck	1	6	170
Grader	1	8	40
Scraper	1	8	14
Excavator	1	8	25
Roller	1	8	2
Asphalt Paver	1	8	25
Forklift	1	8	60
Generator Set	1	8	40
Crane	1	8	4

Site Management during Construction

Dust Suppression and Soil Conditioning

During construction, non-potable water would be used for dust control and soil conditioning during earthwork. The project soils would be conditioned to optimum moisture content and dust generation would be controlled through the application of water sprayed from tanker trucks. Based on a conservative (or high-end) water usage rate of up to 2.0 acre-feet per MW (i.e., 0.2 af/ac.) during site preparation and construction, it is estimated that a 250 MW facility would require a total of 500 acre-feet of water, although actual watering requirements would likely be less. It is anticipated that water for grading and construction would be obtained from existing agricultural wells in the vicinity of each SGF site.

Curtailment of groundwater pumping to meet the project demand for construction water is not currently foreseen. However, in the unlikely event that such unforeseen curtailment occurs, the relatively small volumes of untreated water that would be temporarily required during construction would be purchased from alternative sources and trucked to the sites.

Stormwater Management and Erosion Control

During grading and construction, soil stabilization and runoff control measures would be required to prevent erosion and sedimentation. The particular measures that would be appropriate for conditions within each SGF site would be specified in the Storm Water Pollution Prevention Plan (SWPPP), as required for all projects over 1 acre in size by the State Water Resources Control Board. The SWPPPs would specify Best Management Practices (BMPs) such as stormwater runoff control and hazardous waste management measures, and include monitoring and reporting procedures.

Typical measures would include: diversion of runoff away from disturbed areas, protective measures for sensitive areas, mulching for soil stabilization, straw-bale barriers, and siltation or sediment ponds. Specific BMPs would be determined during the final engineering design stage for each SGF. Approval of each respective project SWPPP by the Regional Water Quality Control Board would be obtained prior to initiation of ground disturbing activities for each SGF (see Section *3.8. Hydrology and Water Quality* for detailed discussion).

Construction Waste Recycling and Disposal

The waste generated during construction would primarily consist of non-hazardous waste materials such as packing containers and materials, wood pallets, scrap metal, glass and paper. These waste materials would be segregated on-site for recycling or disposal at a Class III landfill.

Some quantities of hazardous wastes would be generated during construction, primarily during construction of the SGF substations. These waste materials would include waste paint, waste solvents, waste oil, oily rags, used batteries, etc. Hazardous wastes generated during construction would be either recycled or disposed of at a Class I disposal facility, as required.

Revegetation of Completed SGF Areas

Upon completion of each increment of solar development, the exposed soils beneath and around the solar arrays would be vegetated to prevent erosion and provide dust control, as required by Kings County and the San Joaquin Valley Air Pollution Control District. The exposed areas would be planted

with an approved seed mix that would contain only "low water use" plant species, thus minimizing water use, discouraging weed infestation, and providing habitat value for native wildlife species.

2.3.5. OPERATION OF SOLAR GENERATING FACILITIES

The operation of each SGF would involve similar activities including: facilities operation and monitoring, facility maintenance, and security. These are described in turn below.

Facility Operation and Monitoring

Operational activities would primarily involve monitoring and management of solar generation, which would occur during daylight hours year-round. The SGF operators would likely contract with an off-site O&M provider with a facility in the area. Operations staff would likely not be stationed on the solar facility sites, but would manage the facilities remotely via SCADA systems. Operators would monitor and analyze the collected data to determine maintenance needs, respond to automated alerts from the monitoring systems (e.g., in the event of equipment failures or abnormalities), and communicate with customers and transmission facility operators.

Facility Maintenance

Equipment and Infrastructure Maintenance

Operators would also visit the solar facilities regularly to conduct visual inspections of equipment, internal driveways, and fencing, and perform maintenance or make repairs as necessary. Table PD-6 provides details for on-site equipment and vehicle usage for operations and maintenance purposes for a typical 250 MW solar facility. It is expected that two maintenance personnel would visit the site periodically, with more workers added when repairs or installation of replacement equipment is needed. (See 'Operations Personnel' below for an overview of staffing levels and functions.)

TABLE PD-6

EQUIPMENT AND VEHICLE USAGE DURING SOLAR FACILITY OPERATIONS AND MAINTENANCE FOR A TYPICAL 250 MW SOLAR FACILITY

	Estimated Usage (Annual)		
Equipment	**Units**	**Hours/Day/Unit**	**Total Days/Unit/Year**
All-Terrain Vehicle (ATV)	2	4	5
Tractor	2	8	100
Portable Generator	2	8	60
Portable Water Trailer w/Pump	5	8	80
Vehicles	**Units**	**Daily Miles/ Unit**	**Total Days/ Unit/Year**
Pickup Truck (Routine O&M)	8	30	130
Pickup Truck (Panel Washing)	15	40	80

Weed and Pest Control

As required under the Kings County Development Code, each SGF would implement a Pest Management Plan and a Weed Abatement Plan. The Pest Management Plans would be directed toward prevention and control of infestations by rodents such as rats, ground squirrels, gophers, and voles which can cause damage to project structures and spread diseases. The primary objective would be to avoid rodent infestations through preventative measures such as vegetation management (described below) in order to avoid impacts to protected wildlife species. Natural or ecological control through predation by hawks and owls would also provide incidental control of rodent populations. The use of eradication measures such as application of rodenticides would only be employed as a last resort. (For a detailed discussion on appropriate rodenticide use, see section *3.4 Biological Resources* [at Table BIO-3, item 7].)

The Weed Control Plans would specify measures to prevent infestation of invasive weed species which would reduce the grazing value of the site, pose a fire hazard, and potentially spread to neighboring farmland. Weed control would mainly consist of a combination of methods, including the use of weed-free seed mixes for site revegetation, and keeping vegetation low through sheep grazing and mechanical methods such as mowing, trimming, and hoeing. Herbicides would be used only selectively where needed to control noxious weeds using low impact chemicals and practices that minimize impacts to protected biological species. Herbicides would be applied by a licensed herbicide applicator in compliance with regulations set forth by the U.S. EPA and California Department of Pesticide Regulation (DPR). The use of herbicides would be kept to a minimum. The Pest Management Plans and Weed Abatement Plans would be submitted and subject to County approval prior to issuance of building permits for each SGF within WSP.

Vegetation and Agricultural Management

Approximately 1 percent or less of the surface area of each SGF would be covered with impervious surfaces such as concrete pads and footings for inverters, transformers, substations, O&M buildings, power storage, and small areas of paved parking area. Internal access driveways would occupy up to 9 percent of the site area of each SGF; and while these driveways would have permeable gravel surfaces, they would not support vegetation. At least 90 percent of each SGF would be devoted to solar arrays and adjacent open areas. The permeable soils beneath and around the solar panels would support vegetation and would be planted with an approved seed mix for dust and erosion control, as required by Kings County. The approved seed mix would contain only “low water use” species and would not require irrigation.

Vegetative cover at each SGF would generally be kept low to prevent shading of solar panels and to minimize buildup of combustible fuel loads. The short vegetation cover would also allow passage of emergency vehicles, and access for maintenance and panel washing vehicles between the solar arrays. This would be accomplished by planting slow-growing grasses, and by utilizing sheep grazing during the growing season. The grazing would be managed and controlled by temporary sheep enclosures which would be moved progressively through each SGF site. Grazing would occur from January until the end of the growing season in May, at which time the sheep would be removed. The details of the sheep grazing program would be further described in the Agriculture Management Plan (AMP) which is required by Kings County for every solar project and would implemented to ensure maintenance of sustainable agricultural operations throughout the life of each solar project. The detailed requirements of the AMPs are specified in Section *3.3. Agricultural Resources*, Mitigation Measure AG-1. The AMP for each SGF would be subject to County approval prior to issuance of building permits.

Hazardous Materials Handling and Storage

Limited quantities of hazardous materials would be used and stored at each solar facility for operation and maintenance. These materials would include oils, lubricants, solvents, degreasers, fire suppressants, dust palliatives, and transformer oil. With the exception of dielectric oil used in the transformers, these materials would be stored in the O&M buildings at each solar facility. Flammable materials, such as paints and solvents, would be stored in flammable storage cabinets with built-in containment sumps. Given the limited quantities involved, concrete floor of the O&M building would enable ready cleanup of any spilled hazardous materials. Each solar facility within WSP would be required to prepare and implement a Hazardous Materials Management Plan (HMMP) which would include specifications for hazardous materials handling, use and storage, as well as procedures for spill control and prevention, emergency response, and record keeping (see Section *3.7. Hazards and Hazardous Materials* for detailed discussion).

The solar facilities would generate hazardous waste materials during the project construction and facility operation phases. Hazardous wastes generated during construction and operation would include such as used oils and oil filters, hydraulic fluid, lubricants, oil rags and absorbents, hazardous materials containers, and spent batteries. All such hazardous waste would be collected by authorized contractors and disposed or recycled at facilities approved to accept hazardous waste.

Fire Safety

Each solar project within WSP would include a number of design and operational measures for fire prevention and suppression. Design measures would include incorporation of County design standards for minimum driveway widths, ground clearance, and accessibility to all areas of the project. Fire prevention measures would include vegetation management as described above to minimize the potential for grass fires. All electrical equipment (including inverters) not located within a larger structure would be designed specifically for outdoor installation, and all electrical equipment would be subject to product safety standards. Vehicles and equipment would be required to be parked or stored away from vegetated areas. All construction and operations personnel would be trained in fire prevention and suppression measures, including the safe shut-down of electrical equipment during emergency incidents. Portable carbon dioxide (CO_2) fire extinguishers would be mounted at the inverter/transformer pads throughout the SGFs. Smoking would be permitted only in designated areas.

Prior to commencement of site work for each SGF, the fire prevention and emergency action plans to be implemented during project construction and operation would be prepared and formalized in coordination with the Kings County Fire Department.

Solar Module Cleaning

The PV modules would be washed periodically to remove dust in order to maintain efficient conversion of sunlight to electrical power. The cleaning interval would be determined by the rate at which electrical output degrades between cleanings. Periodic panel washing would likely be most needed during the dry summer months when there is an increased potential for deposition of windblown dust from nearby agricultural operations. It is anticipated that panel washing would be required up to four times per year, and would be accomplished using light utility vehicles with tow-behind water trailers. No chemical cleaners would be used for module washing. It is estimated that water demands for one complete cycle of panel washing would be approximately 2.5 million gallons for a fully operational 250 MW project. (This estimate is based on the following calculation: a water usage rate of 1/8 gallon per

square foot of module area X 80,000 square feet of module area per MW = 10,000 gallons per MW.) Four panel cleaning cycles per year would use approximately 40,000 gallons per MW, or 10 million gallons (or 30.7 acre-feet) of water for a 250 MW facility. (While fewer than four panel cleaning cycles may be required annually, four cleaning cycles are assumed for the EIR analysis.)

Overall Operational Water Demands

General operational activities, such as washing and rinsing of equipment (other than solar panels), hand washing, and other non-toilet uses, are estimated to require of approximately 500,000 gallons (1.53 acre feet) of non-potable water annually for a 250 MW facility. This is based on a conservative (high end) consumption rate of 2,000 gallons per MW per year.)

In addition, the sheep used for grazing would each require up to 3 gallons of water per day. Based on a sheep grazing density of 0.5 sheep per acre over a 5-month (151-day) grazing period (January through May), on approximately 2,250 vegetated acres (2,500 acres minus 10% unvegetated area), yields a total annual requirement of 509,625 gallons for sheep watering, or 1.56 acre-feet per year for a 250 MW facility. (It is assumed for purposes of the EIR analysis that sheep grazing will be employed as a vegetation management practice for all WSP solar facilities, even though this practice would be required by Kings County only on site subject to active Williamson Act or Farmland Security Zone contracts.)

Based on the above annual water consumption estimates for a 250 MW solar facility, the combined operational water use for panel washing (30.69 afy), sheep watering (1.56 afy), and general operational uses (1.53 afy) would total approximately 33.78 acre-feet of water annually over a typical 2,500-acre solar project site (or 0.0135 afy/acre). This is equivalent to 2.16 acre-feet per quarter-section (160 acres). For comparison, the average irrigation rate for agricultural lands within Westlands Water District is approximately 2.5 acre-feet per acre per year, or 400 acre-feet per quarter-section per year (see Section *3.14. Utilities and Service Systems* for detailed discussion).

Operational water supplies would be provided by Westlands Water District (WWD) through its existing system of lateral pipelines for conveyance of imported surface water. The WWD has established an annual allocation of Municipal and Industrial (M&I) water deliveries for PV solar projects within its service area. PV solar facilities are eligible to receive up to 5.0 acre-feet per quarter-section per year of M&I water for operational uses. As noted above, the combined operational water usage rate for a typical WSP solar project is estimated to be 2.16 acre-feet per quarter-section per year, which is well within the WWD's maximum annual allowance of 5.0 acre-feet per quarter-section. During years when CVP surface water allocations are lower than contract amounts, the WWD prioritizes deliveries of M&I water even when agricultural water deliveries may be reduced to 0. Thus temporary periodic curtailment of surface water supplies to meet the project's operational demands is not currently foreseen, even under drought conditions that result in overall shortfalls in CVP delivered water. However, in the unlikely event that such unforeseen curtailment of M&I water deliveries may occur in the future, possibly in the event of a prolonged severe drought, the relatively small volumes of untreated water that would be required for project operations would be obtained from existing groundwater wells in the vicinity. In the unlikely event that such backup groundwater supplies to the project were also to be unavailable at the same time, the relatively small volumes of untreated water required would be purchased from alternative sources and trucked to the site (see Section *3.14. Utilities and Service Systems* for discussion). Small quantities of potable water would be required at the solar facilities for drinking and other uses. Bottled potable water would be delivered to each site by a water delivery service.

Operations Personnel

Facility operations would be conducted by remote monitoring of the facility, as mentioned above. It is estimated that maintenance activities on a 250 MW solar facility would require from 2 to 50 on-site workers at various times, as follows. About 2 workers would visit the solar facilities periodically to perform inspections, maintenance, and repair work, with as many as 20 additional staff added intermittently for major equipment repairs or replacement. Panel washing cycles would involve up to 25 workers for up to 2 weeks per wash cycle, which may to occur up to 4 times per year. During the growing season when sheep are grazing on site, an additional 1 to 3 workers could be required to manage the rotation of sheep flocks through the SGF. Over the course of a year, an average of 10 workers would be expected to be at a typical 250 MW solar facility on any given day. (This is based on a weighted average derived from the number of days each year that each type of worker would be at the site.) Upon WSP buildout in 2030, approximately 80 operational workers would be expected to be within the WSP plan area on any given day.

Deliveries

During SGF operations, regular deliveries would be necessary for replacement PV modules and equipment. For a 250 MW facility, an average of 10 deliveries per day would be expected.

Security

The perimeter of each SGF would be securely fenced and gated to prevent unauthorized access, as described under 'Perimeter Fencing' above. The solar facility operators would contract with private security companies to provide security services during construction and operation. It is not anticipated that security personnel would be permanently stationed at the SGFs. Security would be provided by electronic surveillance equipment such as infrared security cameras and motion detectors, which would be installed around the facilities, with video feeds transmitted in real time to the off-site security contractor for monitoring. In the event that the surveillance system detects a breach, a security representative would be dispatched to the SGF, as needed, and the County Sheriff's Department would be notified as appropriate.

2.3.6. DECOMMISSIONING AND SITE RECLAMATION

At the end of their useful lives, each solar facility would be decommissioned and the land returned to a farmable state. (The purchase contracts for solar generation typically have terms of 25 to 30 years, although the terms could be extended by several years through amendments to the purchase agreements.) Once the solar facilities are de-energized, the facilities would be decommissioned and the sites would be reclaimed in accordance with Soil Reclamation Plans as described in in this EIR (see Section *3.3. Agricultural Resources,* Mitigation Measure AG-1). The Soil Reclamation Plans would be subject to approval by Kings County prior to issuance of building permits for each WSP solar facility.

Under each Soil Reclamation Plan, the deconstruction process would involve removal of all solar arrays, equipment and pads, substations, electrical cables, fencing, and other material. Equipment and materials would be reused and/or recycled to the extent practicable. Since these decommissioning activities would involve exposure and disturbance of soils, measures for erosion and sediment control would be implemented in accordance with a Storm Water Pollution Prevention Plan (SWPPP) that would

be required for decommissioning. Upon complete removal of equipment and salvageable material, the sites would be cleared of any remaining trash and debris.

After the last remnants of the solar facilities are removed and hauled off-site, the land would be tilled to restore the soils to a density and consistency suitable for farming. Finally, the sites would be reseeded with an appropriate weed-free seed mix in order to provide soil stability and moisture retention prior to the resumption of farming. Since the lands within WSP will have been retired from irrigated agriculture, the future farming operations would consist of grazing or dry farming.

It is expected that the decommissioning of each SGF would involve a similar level of activity as the original project construction, since it would essentially involve construction in reverse, or deconstruction. Decommissioning may involve less equipment use and fewer material deliveries, and the time required for decommissioning may be less than the duration of the original project construction. However, for purposes of presenting a reasonable worst-case analysis in this document, particularly for the quantitative analyses, it is assumed that the activity level and duration of decommissioning would be equivalent to that involved in project construction.

2.4. DESCRIPTION OF WSP GEN-TIE CORRIDORS PLAN

2.4.1. Introduction

Overview of Planned WSP Gen-Tie Routes

The Westlands Solar Park Generation-Interconnection Tie-Line (Gen-Tie) Corridors Plan includes two transmission corridors to convey WSP solar generated power to the electrical grid at Gates Substation. The WSP Gen-Tie Corridors Plan is shown in Figure PD-6 and described below.

WSP-South to Gates Gen-Tie Corridor – This planned double-circuit 230-kV transmission corridor would run adjacent and north of the Nevada/Jayne Avenue roadway right-of-way, commencing at the junction of the 25th Avenue alignment and Nevada Avenue in the central portion of WSP and running westward for 11.5 miles along the north side of the roadway to the Gates Substation. This transmission line would serve as a gen-tie providing delivery of solar power generated in the central and southern portions of the WSP to the Gates Substation where it would be transferred to the electrical grid. It is possible that a second transmission line would be added to this corridor to provide additional delivery capacity if needed in the future. If so, the 350-foot wide transmission corridor evaluated in this EIR would provide sufficient width to accommodate two adjacent transmission lines.

WSP-North to Gates Gen-Tie Corridor – This planned double-circuit 230-kV transmission corridor would run parallel and adjacent to the existing 230-kV Henrietta-Gates transmission line, commencing in the northern portion of WSP, and running southwestward for 11.5 miles to the Gates Substation. This transmission corridor would serve as a generation interconnection tie-line (gen-tie) providing delivery of solar power generated in the northern portions of the WSP to the Gates Substation where it would be transferred to the electrical grid. It is possible that a second transmission line would be added to this corridor to provide additional delivery capacity if needed in the future. If so, the 350-foot wide transmission corridor evaluated in this EIR would provide sufficient width to accommodate two adjacent transmission lines.

Definition of WSP Gen-Tie Corridors and Study Areas

At this time, the exact locations of transmission towers and lines, as well as access roads, staging areas, and pulling sites, have not been determined. To provide sufficient flexibility for transmission line routing, a corridor width of 350 feet is assumed for purposes of this EIR. The final right-of-way for each gen-tie line will likely be 100 feet wide for a single line of monopoles and up to 350 feet for a double gen-tie corridor with two parallel gen-tie lines. In addition, the EIR study area extends outward a distance of one mile from both sides of the 350-foot wide gen-tie corridors. This additional buffer area provides further flexibility for gen-tie routing, and would encompass the locations of other project components such as staging areas and pulling and tensioning sites that may extend outside the 350-foot gen-tie corridors.

Descriptions of Gen-Tie Corridors Vicinity

The routes of the two WSP gen-tie corridors are described below and shown in Figures PD-6 and PD-7.

WSP-South to Gates Gen-Tie Corridor

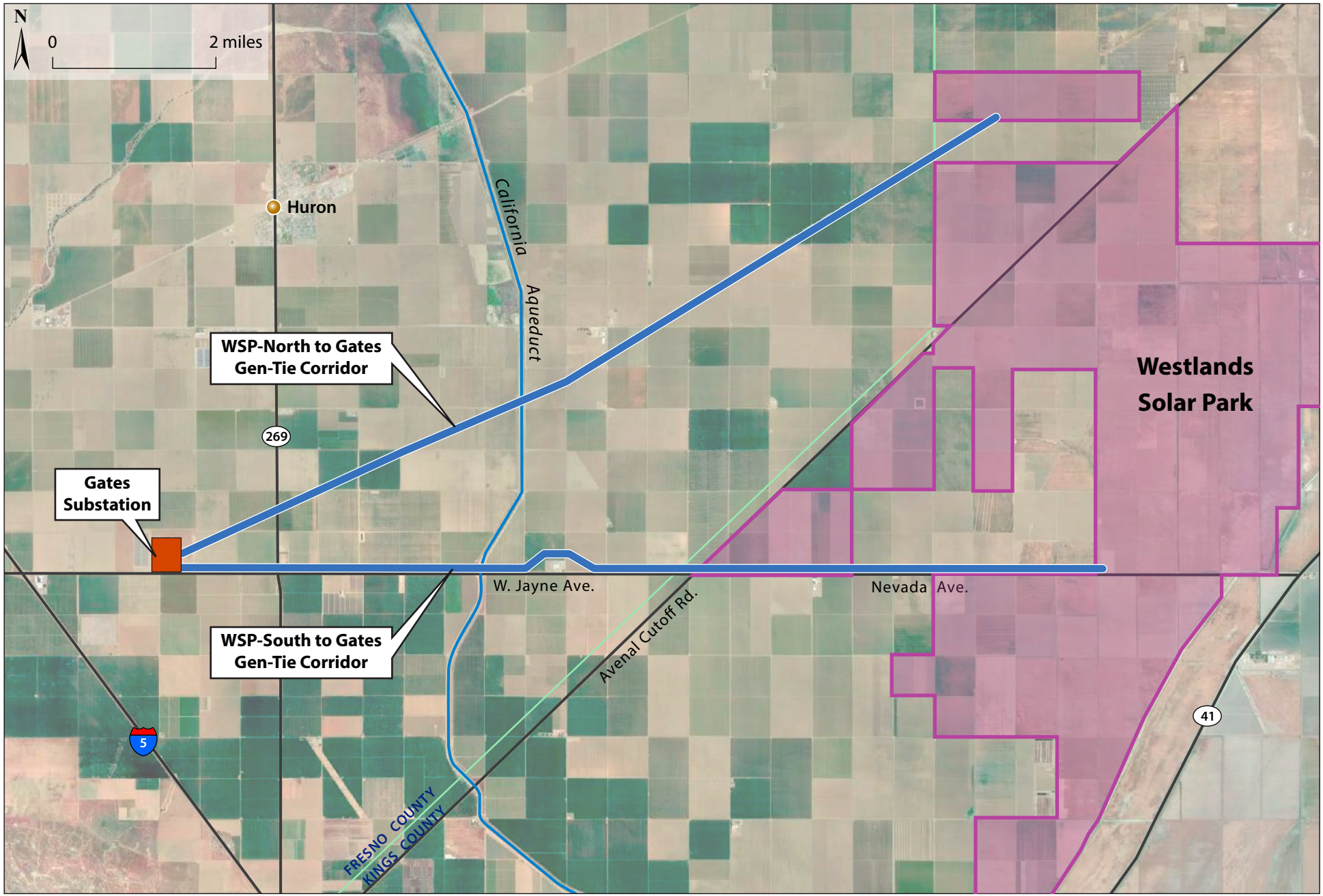
As shown in Figure PD-6, this approximately 11.5-mile long 230-kV gen-tie corridor commences from the junction of the 25th Avenue alignment and Nevada Avenue, approximately midway between Avenal Cutoff Road and SR-41, in the central portion of the WSP plan area. From this location, the corridor heads west along the north side of Nevada Avenue through agricultural fields for a distance of about 5 miles to Avenal Cutoff Road and the Kings/Fresno county line where the roadway becomes Jayne Avenue in Fresno County. Approximately 1 mile west of the county line, the corridor shifts northward about 800 feet to avoid the Giovannetti cooling facility and associated residences and then shifts south again to rejoin Jayne Avenue. The corridor continues westward across the California Aqueduct and on through agricultural fields along Jayne Avenue for 4 miles to the junction of Lassen Avenue/SR-269, and then extends an additional 1 mile to the Gates Substation.

WSP-North to Gates Gen-Tie Corridor

As shown in Figure PD-6, this approximately 11.5-mile long 230-kV gen-tie corridor commences from the northern portion of the WSP plan area and heads southwestward along the south side the existing Henrietta-Gates 230-kV transmission line. The corridor passes through agricultural fields and orchards, crossing the California Aqueduct after 7 miles, and then crosses Lassen Avenue/SR-269 after an additional 3 miles, and then extends another 1.5 miles to the Gates Substation on the north side of Jayne Avenue.

Existing Residences in the Vicinity of the WSP Gen-Tie Corridors

Along the total 23-mile length of the Westlands Transmission Corridors, there are 20 ranch dwellings and other rural residences within one mile of the corridor boundaries. Of this total, 10 rural dwellings are located within 1,000 feet of the corridor boundaries. These dwellings or groups of dwellings are identified by number on Figure PD-7. Table PD-7 provides further detail on each of these dwellings or groups of dwellings. This exhibit and table provide locational information for the analysis of potential impacts to these residences as discussed in several topical sections (e.g., aesthetics, air quality, land use, noise) in Chapter 3.

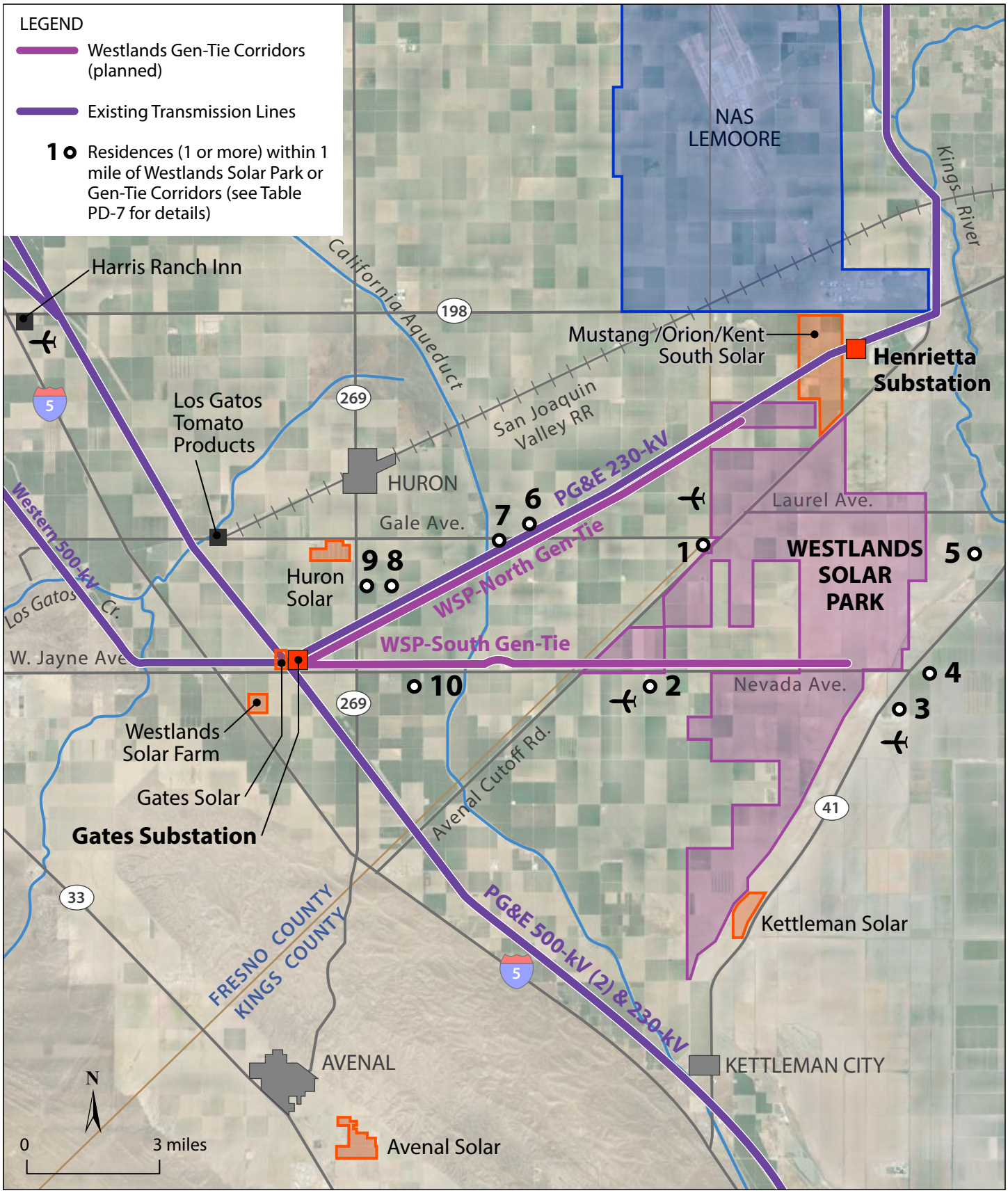


Base Map: Google Earth, 2017

WSP Gen-Tie Corridors Plan

Figure PD-6

This page intentionally left blank



Base map: Google Earth, 2016

Gen-Tie Corridors - Existing Land Use

Figure PD-7

This page intentionally left blank

TABLE PD-7

EXISTING RESIDENCES WITHIN 1 MILE OF WSP AND GEN-TIE CORRIDORS

Map Ref. (Fig. PD-7)	Residences	Location	Distance from WSP or Transmission Corridor*	Residences Within 1,000 feet*
	Westlands Solar Park			
1	20 ranch resid. (Shannon Ranch)	Avenal Cutoff Road/Lincoln Gale Ave.	65 – 600 feet	20
2	2 resid. (Stone Land Co. Ranch)	Nevada Av., 1.4 mi. E. of Avenal Cutoff	180 feet	2
3	4 ranch resid. (Westlake Farms)	SR-41, 1.3 mi. S. of Nevada Avenue	0.7 – 0.9 miles	0
4	2 ranch dwellings	Nevada Ave., just east of SR-41	0.5 – 0.6 miles	0
5	4 rural residences	22nd Ave., north of SR-41	0.9 – 1.0 miles	0
	WSP Gen-Tie Corridors			
	WSP-North to Gates Gen-Tie (11.5 miles)			
6	2 ranch dwellings	N. of Gale, 1.5 mi. E. of CA Aqueduct	0.4 – 0.5 miles	0
7	4 ranch dwellings	Gale Ave., 0.7 mi. E. of CA Aqueduct	0.3 – 0.4 miles	0
8	1 ranch dwelling	Tractor Ave., 1.0 mi. E. of SR-269	0.6 miles	0
9	3 ranch dwellings	Tractor Ave., 0.2 mi. E. of SR-269	0.9 miles	0
	WSP-South to Gates Gen-Tie (11.5 miles)			
2	2 resid. (Stone Land Co. Ranch)	Nevada Ave., 1.4 mi. E of Avenal Cutoff	180 feet	2
10	8 ranch dwellings	Jayne Ave., 1.3 mi. E of SR-269	125 feet	8

*0.19 miles = 1,000 feet.

Transmission Towers and Conductors

Transmission Towers

Throughout the gen-tie corridors, it is expected that the transmission structures would consist of tubular steel monopoles, while some may consist of steel lattice towers. Self-supporting tubular steel poles (TSPs) or monopoles would range in height from 95 to 180 feet and would have tower-to-tower span of up to 1,400 feet. If used, the lattice towers would be fabricated from galvanized steel members (see Figure PD-8). These towers could be single-circuit or double-circuit towers, although they would likely be double-circuit structures with one side left unstrung until additional transmission capacity is needed in the corridors. Depending on terrain conditions, the tower heights could range from 110 to 195 feet. The typical span between towers would likely be up to 1,400 feet, although spans of up to 1,900 feet are not uncommon.

Both types of transmission tower utilize concrete foundations. Steel-lattice structures require four footings (one for each leg), while TSPs would require single footings. In both cases, footings would consist of steel-reinforced concrete piers which would be cast in place. The depth and dimensions of the footings would vary depending on height and weight of the towers, the number of circuits supported, and soil conditions. For steel lattice towers, the typical concrete footing would range from 15 to 30 feet deep and 3 to 6 feet in diameter, while the TSP footings would be up to 20 to 60 feet deep and 6 to 10 feet in diameter. In each case, the concrete foundations would extend 2 to 4 feet above ground level.

Conductors and Tower Components

Each transmission tower carries conductors ("wires" or "cables"), insulators, and ground wires. Each circuit consists of three phases, each of which is carried on a separate conductor cable. Double circuit transmission towers typically have one circuit on each side of the tower, with the conductors for each three-phase circuit arranged vertically on their respective sides.

As noted, towers designed to carry two circuits are sometimes initially strung with only one circuit on one side of the tower and no circuit on the other. Conductors must meet minimum ground clearances (at the bottom of the conductor sag), typically 27 to 30 feet above the ground. Greater clearances may be required in certain areas to avoid tree crops or other vegetation that could pose a risk to operation of the transmission line. Minimum safety clearance requirements and local topography would dictate the exact height of each tower.

Insulators are used to connect the conductors to the tower structures while inhibiting the flow of electric current from energized conductors to the ground or other energized system elements. Insulators and their associated hardware are configured to support conductors while maintaining required distances between phases and grounded structures.

To protect conductors from the hazard of direct lightning strikes, overhead ground wires (shield wires) or fiber optic ground wire is installed on top of tower structures in order to transfer lightning currents into the ground.

Construction of Transmission Lines

Construction Overview

It is estimated that the construction of each gen-tie line would be completed within one year. The first gen-tie line would be constructed in conjunction with completion of the first SGFs in WSP, and the second gen-tie line would be constructed in the later phases of WSP buildout. It is expected that the WSP-South to Gates Gen-Tie would be the first gen-tie line to be constructed.

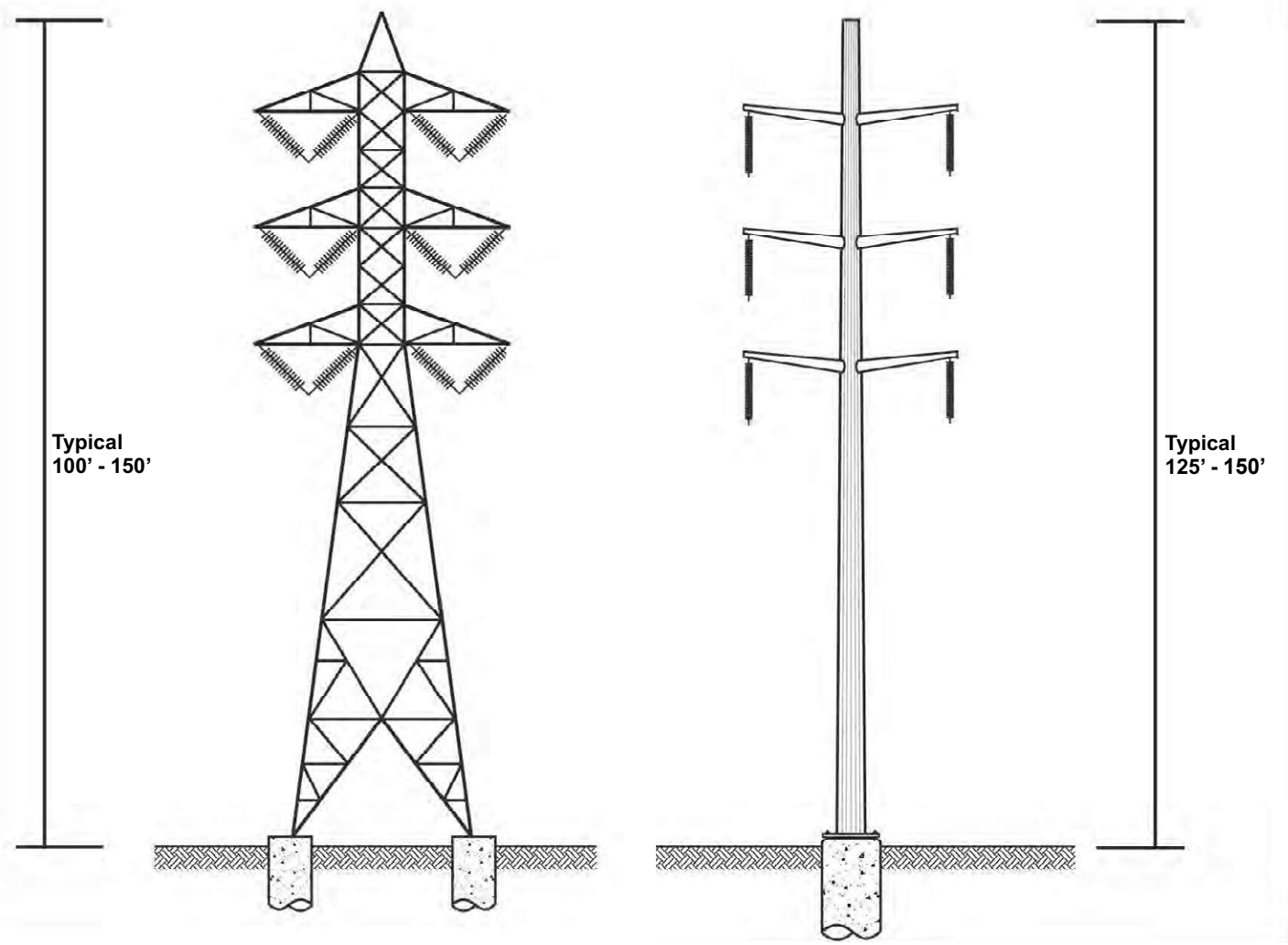
Construction of the gen-tie lines would follow a general sequence of activities, as follows: right-of-way acquisition; surveying and pre-construction activities; construction of temporary access roads, preparation of staging areas; tower installation; conductor installation; installing substation tie-ins; and site reclamation. Each of these activities is described below.

Right-of-way Acquisition

The new gen-tie corridors would require the acquisition of right-of-way (ROW) from the landowners whose properties are traversed by the corridors. Approximately 11.5 miles of ROW would be acquired for each gen-tie line. The ROW would likely be in the form of easements, which would allow agricultural activities to continue within the right-of-way. The easements would range in width from 100 feet to 300 feet depending on whether the gen-tie included a single or double row of transmission towers.

Surveying and Pre-Construction Activities

For surveying on private lands, the project proponent would negotiate rights-of-entry with the affected landowners. Construction survey work would consist of locating the centerline, tower locations, ROW



Lattice Tower

Tubular Steel Pole (TSP)
(Monopole)

Typical 230-kV Transmission Towers

Figure PD-8

This page intentionally left blank

boundaries, and temporary tower access roads. Once the centerline and access roads are surveyed and clearly marked in the field, preconstruction surveys for cultural and biological resources would be conducted. Geotechnical investigations would also be conducted to determine soil densities and strength for use in geotechnical engineering and structural design.

Construction of Access Driveways

Each transmission tower site would require vehicular access during construction, and also during transmission line operation to allow access for inspection and maintenance. Along the WSP South to Gates Gen-Tie Corridor, the gen-tie right-of-way would run adjacent to Nevada and Jayne Avenues, so access would be gained directly from these county roads without the need for tower access driveways. Along the WSP North to Gates Gen-Tie Corridor, some towers would not be located directly adjacent to existing roads or farm lanes, and thus would require temporary access driveways to support heavy construction vehicles and equipment. Existing paved and unpaved driveways would be used to the maximum extent practical. Existing farm lanes and public roads would provide adequate access to towers in many instances, although modifications may be needed in some areas to improve drivability. During the design phase, the transmission towers would be sited as near to existing roads and farm lanes as practicable in order to avoid creating new access driveways or having to traverse cultivated fields.

Clearing Transmission Right-of-Way

In order to reduce hazards associated with direct contact with trees and vegetation, minimum electrical safety clearances would be required as specified by national electrical safety standards. As such, some trimming or removal of mature vegetation within the transmission ROW may be required. Trees that could fall onto the lines or affect lines during wind-induced line swing would be removed. Normal clearing procedures would be top or remove large trees and not disturb smaller trees.

The lands with permanent crops such as nut and fruit orchards would be most affected. Site clearing would be required at the tower sites including a specified permanent clear area surrounding each tower. The clearance area, including tower pad, would be up to 70 feet square (0.1 acres) for lattice towers and less for monopoles. To the extent feasible, the towers would be sited at the edges of fields near existing roads and farm lanes to avoid cultivated lands. In some locations, taller towers would be required in order to provide the higher than standard conductor ground clearances in order to avoid removal of existing orchard trees beneath the conductor sags.

Preparation of Staging Areas

It is anticipated that one construction yard or staging area would be required for each gen-tie project to provide for storage of materials (e.g., tower steel, conductor reels, structure hardware, etc.), construction equipment and vehicles, parking areas for crew vehicles, temporary construction offices, and portable sanitation facilities. These staging areas would be approximately 5 acres in size and could be located within unused portions of existing substation sites, or on previously disturbed private land or existing vacant commercial sites in the corridor vicinity. The precise locations and dimensions of the temporary construction yards would be determined during the engineering phase; however, it is anticipated that the sites selected would well away from any existing residences.

Tower Installation

After the access to each tower location is completed, a cleared work area at the tower site would be required to accommodate the construction of the tower footings, laydown areas for materials, work areas for the assembly of the tower structure, and sufficient area to allow necessary crane maneuvers for tower installation. Depending on the size and type of tower, the cleared work area would average approximately one acre in area. Vegetation would be mostly crushed, and the sites would only be cleared, graded, and compacted where necessary to accommodate heavy vehicles.

Next, the holes for tower foundations would be bored or augured, and concrete poured in place over the pre-assembled reinforcing steel cages set into the holes. Depending on tower type and soil characteristics, up to 100 CY of concrete would be delivered to each tower site to install footings. Once the concrete has cured, the towers would be bolted to the footings. For steel lattice towers, each portion of tower would be assembled at the tower site and lifted into place by cranes and then fastened to the previously installed section below. For tubular steel poles, sections of pole would be hauled to each tower site and similarly lifted into place and bolted together.

It is expected that the soils excavated from the tower foundation holes would be distributed over the adjacent lands and would not be exported from the tower sites.

Given the deep soils of the valley floor that characterize the gen-tie corridors, it is expected that standard excavation methods would be adequate to prepare holes for the tower footings in the valley. No special construction techniques, such as rock blasting, are anticipated.

Helicopters are often used for tower construction in rugged terrain that is inaccessible by road. Given that the gen-tie corridors are readily accessible, it is anticipated that all tower sites would be accessible by heavy construction equipment such as cranes and flatbed trucks. However, it is possible that limited use of helicopters may be needed for conductor stringing over SR-269 or the California Aqueduct. Any tower or stringing locations that may require helicopter construction would be determined at the engineering design stage. However, for purposes of this program-level evaluation, it is conservatively assumed that some helicopter construction would be required. Helicopter services would be obtained on a short-term contract basis from aviation firms in the region. Any landing zones or refueling areas along the gen-tie corridors would be identified at the engineering design stage at the time when the locations of helicopter construction and staging areas, if any, are identified.

Upon completion of construction activity, a permanent setback area would be kept clear around each tower structure for maintenance access and fire safety purposes. It is expected that the typical finished tower pad, including clearance area, would be up to 70 feet square (0.1 acres) within 100-foot wide easement.

Conductor Installation

After the towers are completed, the conductors and ground wires would be installed. This would begin by stringing pilot lines from tower to tower by boom lifts or aerial man-lifts. The pilot lines would guide the pulling of conductors and ground wires, which would be kept under tension to prevent contact with the ground and obstacles.

Conductors and ground wires would be strung using powered pulling equipment at one end and powered braking or tensioning equipment at the other end of a conductor segment. Pulling and tensioning sites would be spaced about 3 miles apart and would temporarily occupy areas of areas of 2 acres on average. These stringing equipment sites would mainly be located within the transmission corridors. In locations where the transmission alignment changes course, the pulling and tensioning sites could extend beyond the 300-foot-wide transmission corridor at these angles or corners, but would not extend more than 1,000 feet from the corridors. Depending on topography, some grading may be required at pulling and tensioning sites to create level pads for equipment. As with the transmission towers, the precise locations and dimensions of the pulling and tensioning sites would be determined at the engineering design stage.

It is expected that most of the entire length of the transmission corridors would be accessible by trucks and equipment. Thus it is anticipated that most conductor installation would be accomplished from the ground by use of aerial man-lifts/bucket trucks. In some instances, it is possible that helicopters may be needed for cable stringing over the California Aqueduct or SR-269. If so, it is expected that helicopter services would be obtained on a short-term contract basis from aviation firms in the region. Any landing zones or refueling areas along the transmission corridor would be identified at the engineering design stage at the time when the locations of helicopter use, if any, are identified.

There are several of locations along the gen-tie corridors where the conductors would cross over public roads and highways, aqueducts, and electrical distribution and transmission lines. To protect these underlying features during conductor stringing, guard structures are typically installed to intercept cables and prevent them from dropping below a specified height. Typical guard structures consist of standard wood poles, 60 to 80 feet high, connected by a similar wood cross member to form an "H-frame." Depending on the overall footprint of the transmission line, guard structures can consist of several poles on either side of a crossing, creating a series of connected H-frames on each side. Typically, guard structures would be placed on either side of the protected feature, with protective netting strung from the cross members on one guard structure to the cross members on the opposite structure. (In some instances, the use of guard structures would be substituted with the use of boom-type trucks equipped with heavy outriggers.) At each crossing location, the guard structure would be removed once the overhead conductors have been secured to towers. The WSP gen-tie lines would involve a several such crossings, including one over State Highway 269, at least 2 over county roads, 2 over the California Aqueduct, and 2 or more over existing transmission lines, as well as a number of crossings over electrical distribution lines. At each crossing, guard structures would be designed and installed in accordance with the safety requirements applicable to each.

It should be noted that Kings County may require undergrounding of gen-tie lines where they cross Kings County roads such as Avenal Cutoff Road. If the gen-tie lines are owned by a public utility (e.g., PG&E) which has a franchise agreement with the County, then overhead crossings of County roads would be permitted. If the gen-tie lines are privately-owned, the County would require undergrounding of the gen-tie lines at County road crossings. At this planning stage of the Westlands Solar Park, it has not been determined whether the gen-tie lines will be owned by a public utility or privately owned.

Substation Tie-ins

The WSP gen-tie lines would extend to the point of interconnection to the State grid at the Gates Substation. Within the substations, modifications may be required to accommodate the new gen-tie lines. The modifications would include addition of new bays, circuit breakers, capacitor banks, shunt

capacitors, and other electrical equipment. The details of the substation tie-ins would be determined during the engineering design phase, and any associated impacts would be addressed during the course of project-specific environmental review for the substation modifications. However, any required upgrades would occur within the fence line of the Gates Substation.

Site Management During Construction

Dust Control

During construction, water trucks would be used for regular application of water to minimize dust generation. It is also expected that transmission construction would include compliance with the fugitive dust measures specified in Regulation VIII of the San Joaquin Valley Air Pollution Control District (SJVAPCD).

Drainage and Erosion Control

Measures to prevent erosion during construction would be specified in the Storm Water Pollution Prevention Plans (SWPPPs) required for the transmission line projects by the State Water Resources Control Board. The SWPPPs would specify Best Management Practices (BMPs) for erosion control and hazardous material containment to be implemented during construction. Drainage control features would be installed, as appropriate, to minimize stormwater runoff from construction areas. (See Section *3.8. Hydrology and Water Quality f*or a detailed discussion of SWPPPs and BMPs.)

Construction Waste

During construction, the waste generated would primarily consist of non-hazardous waste materials such as waste lumber, scrap metal, greenwaste, sanitation waste, and common trash. These waste materials would be segregated on-site for recycling or disposal at the appropriate facilities.

Soil excavated for tower footings would be spread over the area immediately surrounding the tower sites. Soil disposal would not be permitted on slopes exceeding 10 percent or within 100 feet of a stream or water body.

Some quantities of hazardous wastes would be generated during construction. These waste materials would include fuels, lubricants, and cleaning solvents, etc. Hazardous wastes generated during construction would be either recycled or disposed of at a Class I disposal facility, as required.

Land Disturbance and Restoration

The construction of the transmission lines would result in temporary and permanent land disturbance at tower locations and in temporary land disturbance at work sites and staging areas. Table PD-8 contains estimates of land areas that would be permanently and temporarily disturbed. Lands subject to temporary disturbance would be restored as described in the following paragraph.

Upon completion of each segment of transmission line, the areas disturbed during construction would be restored as appropriate. The disturbed areas would include: construction yards and staging areas; work pads and laydown/assembly areas at tower locations; pads created for pulling and tensioning; and guard structure sites. Reclamation would involve the regrading and restoring soil density the disturbed areas with the objective of returning them to pre-construction conditions. A detailed reclamation plan

would be prepared at the engineering design stage and incorporated into the plans and specifications for each gen-tie project.

Cultivation of row crops and tree crops are anticipated to continue within the transmission rights-of-way. Within the WSP gen-tie lines would pass through approximately 7.5 miles of existing tree crops. In order to provide adequate clearance between the tree tops and the conductor sags, it is anticipated that taller towers would be used to provide greater ground clearance for conductors and avoid removal of tree crops along the conductor sags. Thus it is not anticipated that any permanent tree crops would be removed beneath the conductor sags.

TABLE PD-8

WSP GEN-TIE CORRIDORS - LAND DISTURBANCE ESTIMATES

Transmission Project Feature	Quantity	Land Disturbance (Acres)		
		Total Disturbance Area	Temporarily Disturbed/ To be Restored	Permanently Disturbed
Tower Sites	115	115	113	2
Tower Access Spur Roads	33	8	8	0
Pulling/Tensioning Sites	8	16	16	0
Staging/Material Storage Sites	2	10	10	0
Totals	--	149 acres	147 acres	2 acres

Assumptions:

1. Total length of transmission corridor = 23.0 miles.
2. Towers per mile of corridor = 5.0 average.
3. Temporary disturbance area at each tower site = 1.0 acres.
4. Permanent disturbance area at each tower site = 0.02 acres for monopoles; 0.1 acres for lattice towers. All towers are assumed to be monopoles.
5. Temporary tower access roads: average length = 500 feet; temporary width = 20 feet (0.23 ac No temporary access roads needed along WSP-South to Gates Gen-Tie. Approximately 33 temporary access roads needed along WSP-North to Gates Gen-Tie, assuming towers are placed adjacent to existing 230-kV towers. No permanent tower access roads will remain after construction.
6. Pulling/tensioning sites: spacing = 3 miles; average temporary disturbance area = 2.0 acres.
7. Staging/material storage sites: spacing = 15 miles; temporary disturbance area = 5.0 acres.

Construction Workforce, Vehicles, and Equipment

Workforce

Based on similar transmission projects in the region, each WSP gen-tie project is expected to have a total workforce of approximately 100 construction workers. It is expected that most of construction personnel would be drawn from the communities in the region, although some specialized workers may need to be brought in from outside the area and be temporarily lodged in local hotels. Given the dispersed nature of the construction activities along the gen-tie corridors, with relatively few employees traveling to any given work site, it likely would not be practical to provide shuttle service; likewise,

opportunities for carpooling would be limited. Although some ridesharing would likely occur, it is assumed that all construction workers would be solo commuters.

During construction, the work activities would be distributed along the gen-tie corridors, with various crews engaged in surveying, ROW clearing, access driveway construction, staging area preparation, tower foundation installation, tower assembly and erection, conductor installation, guard structure installation and removal, and reclamation. The peak of construction activity at any given site would be tower assembly and erection by a 22-person crew. Assuming that these workers would all commute solo, the peak traffic generated by construction personnel would be 22 AM peak-hour trips and 22 PM peak-hour trips. In addition, the tower construction activities would move fairly quickly from one tower site to the next (i.e., no more than 2 days at any tower site).

Typically, construction would take place during the hours of 7 AM to 5 PM, Monday through Friday, although work could take place outside these hours if needed. For example, highway crossings may be scheduled during nighttime hours to minimize traffic disruption. In such instances, night lighting would be required for safe working conditions, but the lights would be oriented away from any sensitive receptors nearby.

Construction Deliveries

Equipment and Materials

The transmission projects are expected to use approximately 70 pieces of construction equipment and support vehicles at various stages of construction. This would include equipment such as excavators, back-hoes, graders, dozers, compactors, auger trucks, concrete mixer trucks, cranes, fork lifts, puller trucks, tensioner trucks, hydraulic man-lifts, winches, water trucks, fuel trucks, dump trucks, flat-bed trucks, semi flat-bed trucks, pole trucks, pick-up trucks/crew cabs, and generators. Most equipment would be brought to the individual sites when needed and would remain at those sites throughout the duration of the activities for which they are needed.

Deliveries of tower steel, hardware, conductor spools, concrete, and equipment would occur throughout the construction period. The equipment and material deliveries would originate from various locations in central California and would utilize regional highways and local roads to reach the work sites along the gen-tie corridors.

Concrete and Steel Deliveries

Concrete would be delivered to tower sites by concrete mixer trucks for use in construction of the tower footings. It is expected that concrete would be supplied from ready-mix plants located near Coalinga. It is estimated that up to 100 CY of concrete would be required at each tower location, assuming steel lattice towers with deep footings throughout. Given a concrete mixer truck capacity of 10 CY, and conservatively assuming that the four footings for each tower would be completed in one day, a total of 10 concrete deliveries would occur at each tower site over the course of one day. Deliveries of tower steel and other materials for tower installation would involve approximately 22 round trips by trucks per day. The combined truck deliveries of concrete, steel, and other tower materials would total approximately 32 round trips per day (or 64 trip ends) at any given tower site. Since installation of tower foundations and tower construction represent the peak of construction activities at any given site along the gen-tie corridors, these 64 one-way trips represent the peak daily truck traffic generation for the gen-tie projects at any given location on the roadway network.

Operation and Maintenance of Transmission Lines

After completion, the transmission facilities would be inspected, maintained, and repaired in accordance with the proponent utilities' procedures and regulatory requirements. Transmission components would be inspected at least once per year for corrosion, equipment misalignment, loose fittings, and mechanical problems. The access driveways and spur driveway would be inspected, maintained, and repaired as necessary to ensure continuity of access.

Vegetation, landscaping, and agricultural crops in the vicinity of the towers and conductors would be maintained at clearance distances as required by applicable regulations and safety standards.

2.5. APPROVED AND PENDING PROJECTS / INTRODUCTION TO CUMULATIVE IMPACTS ANALYSIS

Analysis of Cumulative Impacts under CEQA

The impact analyses for the environmental topics in Chapter 3 are primarily focused on the evaluation of impacts associated with WSP solar development and gen-tie line construction. At the end of each topical section is an evaluation of potential cumulative impacts, or the impacts associated with the WSP solar development and gen-tie line construction when combined with the impacts of other projects in the vicinity. The CEQA provisions for the analysis of cumulative impacts are summarized below, together with a description of the methodological approach used in evaluating cumulative impacts in this EIR.

CEQA Guidelines Section 15355(b) states: "An EIR shall discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable, as defined in section 15065(a)(3)." As stated in Section 15065(a)(3) of the CEQA Guidelines: "'Cumulatively considerable' means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects…" The discussion of cumulative impacts may consist of either: "(A) A list of past, present or reasonably anticipated future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency, or (B) A summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, or which described or evaluated regional or areawide conditions contributing to the cumulative impact" (CEQA Guidelines §15130(b).)

As mentioned, the cumulative impact analysis for each environmental topic (e.g., biological resources, traffic, noise, etc.) appears at the end of each topical section in Chapter 3. Since the buildout period for WSP extends to 2030, the cumulative evaluation includes separate analyses for near-term cumulative impacts and far-term cumulative impacts. In general, the evaluations of near-term cumulative impacts rely on the list approach, which considers the approved, pending and foreseeable projects within the vicinity of WSP and the gen-tie corridors. The evaluations of far-term cumulative impacts are generally based on the assumed buildout of all General Plan land uses in the vicinity.

The evaluation of cumulative impacts for each topic area begins with a description of the geographic scope of that particular cumulative analysis. The geographic scope varies for each topic area. In some instances, the geographic scope is highly localized (e.g., noise) and for some topics it extends to a wider area (e.g., biological resources).

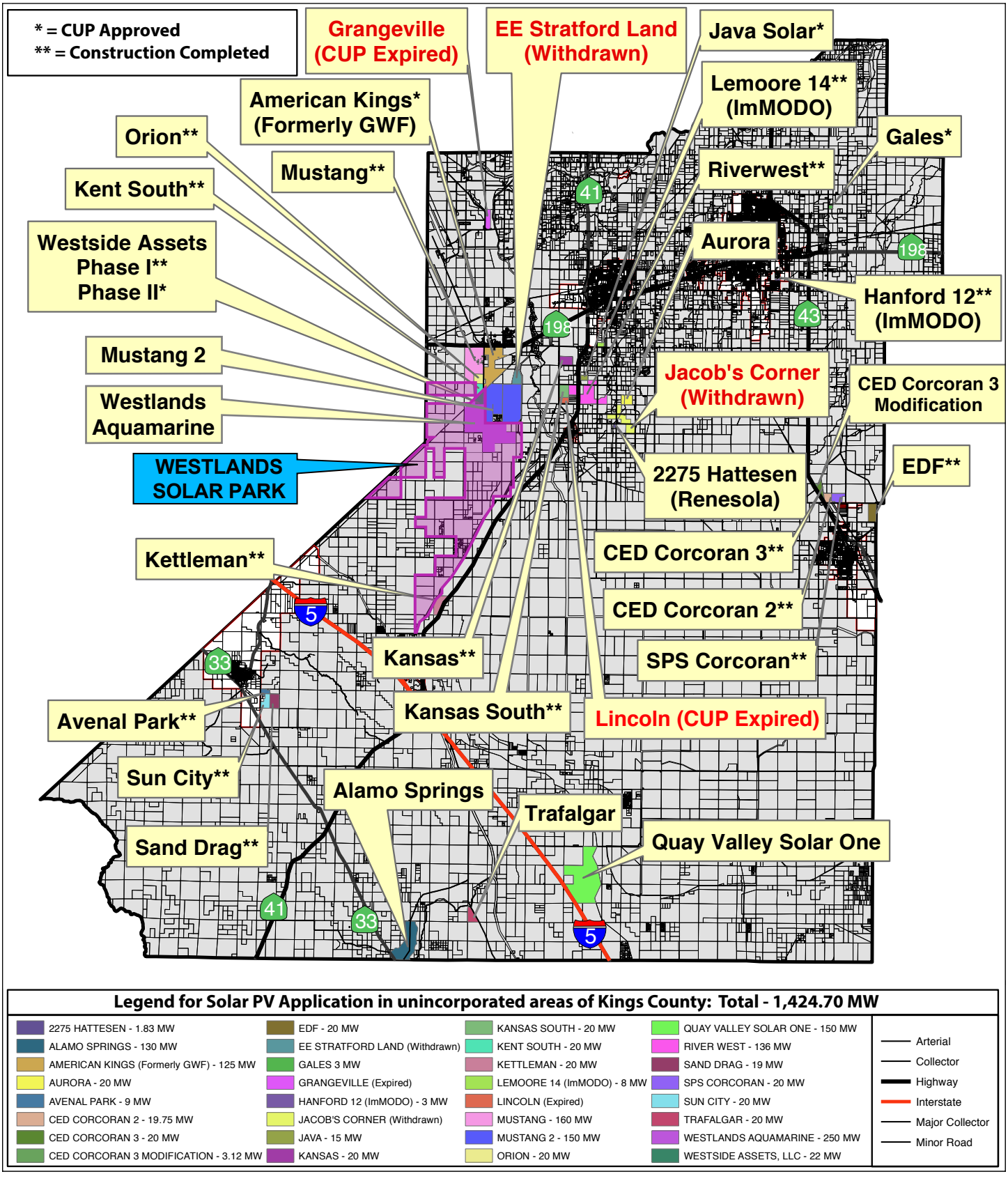
The approach to assessing the significance of a cumulative project impact is based on the provision of Section 15065 of the CEQA Guidelines which states that the effects of a project must be "cumulatively considerable" to be considered significant. Accordingly, CEQA requires a two-step analysis for cumulative impacts, with the first step resulting in a determination of whether a significant cumulative impact would occur for each environmental topic, and the second step resulting in a determination of whether the project contribution to the cumulative impact is "considerable." An affirmative finding is required for both steps in order to conclude that a project impact is cumulatively significant.

Approved, Pending, and Reasonably Anticipated Future Projects

The list of approved, pending, and reasonably anticipated future projects in the vicinity is contained in Tables PD-9 and PD-10. Table PD-9 includes all solar PV projects that are pending, approved, or completed in Kings County (see Figure PD-9). According to Kings County staff, there are no other substantial projects in the County, with the exception of Quay Valley project discussed below. Other projects that have been proposed and approved in Kings County over the past several years have consisted solely of minor projects such as cell towers or adaptive reuse projects that involve minimal or no impacts. As such, these minor projects were not included on the list in Table PD-9 since there is no potential that they would contribute to a cumulatively significant impact that may be associated with the project.

The Quay Valley project is a large mixed-used development on an approximately 7,500-acre site along Interstate-5 just north of the Kern County line. The Quay Valley project includes 25,000 dwelling units plus hotels, restaurants, a business park, a research park, a Hyperloop demonstration track, and a 150 MW solar PV generating facility.

Table PD-10 includes all pending, approved, and recently completed projects in the vicinity of WSP and the WSP Gen-Tie Corridors located in southwestern Fresno County. These projects are shown in Figure PD-10, and consist mainly of solar PV projects, but also include two planned transmission projects. The first transmission project is the planned 230-kV Gates to Gregg transmission project, known as the Central Valley Power Connect (CVPC) project. The CVPC project is currently in the route planning stage, in which three alternative transmission routes are under consideration in the WSP vicinity, as shown in Figure PD-10. (Note: In late 2026, the CVPC project was placed on hold by the California ISO and PG&E pending reassessment on whether to proceed with the project as originally planned. However, the CVPC project is retained as a cumulative project for purposes of this EIR.) Another transmission project planned in the vicinity is the Westlands Transmission Project, which consists of a planned 500-kV transmission line extending from Gates Substation north to the Dos Amigos Pumping Plant. This transmission project is also in the very early route planning stage, and the preferred route and alternatives have not yet been formally identified. However, it is assumed for purposes of this analysis that the preferred route would run parallel to the existing PG&E transmission corridor along the east side of Interstate 5, as shown in Figure PD-10.



Source: Kings County Community Development Agency, April 2017

Pending, Approved, and Completed Solar PV Projects in Kings County

Figure PD-9

This page intentionally left blank

TABLE PD-9

PENDING, APPROVED, AND COMPLETED SOLAR PV PROJECTS IN KINGS COUNTY

Project	Acreage	Generating Capacity (MW)	Status (As of 9/1/17)
Sun City	180	20	Constructed
Sand Drag	240	19	Constructed
Avenal Park	86	9	Constructed
CED Corcoran Solar 2	124	20	Constructed
SPS Corcoran	228	20	Constructed
American Kings (former GWF)	978	125	CUP Approved
Sunpower Henrietta (Riverwest)	836	136	Constructed
Kansas South	230	20	Constructed
Aurora	186	20	Pending
Kansas	200	20	Constructed
Mustang	1422	160	Constructed
EDF	200	20	Constructed
Orion	200	20	Constructed
Kent South	200	20	Constructed
Kettleman	220	20	Constructed
CED Corcoran Solar 3	138	20	Constructed
Quay Valley Solar One	1500	150	Pending
Hanford 12 (ImMODO)	19	3	Constructed
Westside Solar Project*	187	22	Partially Constructed
Lemoore 14 (ImMODO)	60	8	Constructed
2275 Hattesen (Renesola)	16	2	CUP Approved
Java Solar	96	15	CUP Approved
Mustang 2	2459	150	Pending
Alamo Springs	985	130	Pending
Westlands Aquamarine*	1860	250	Pending
CED Corcoran Solar 3 (Modification)	17	3	CUP Approved
Totals	**13,797**	**1,536**	

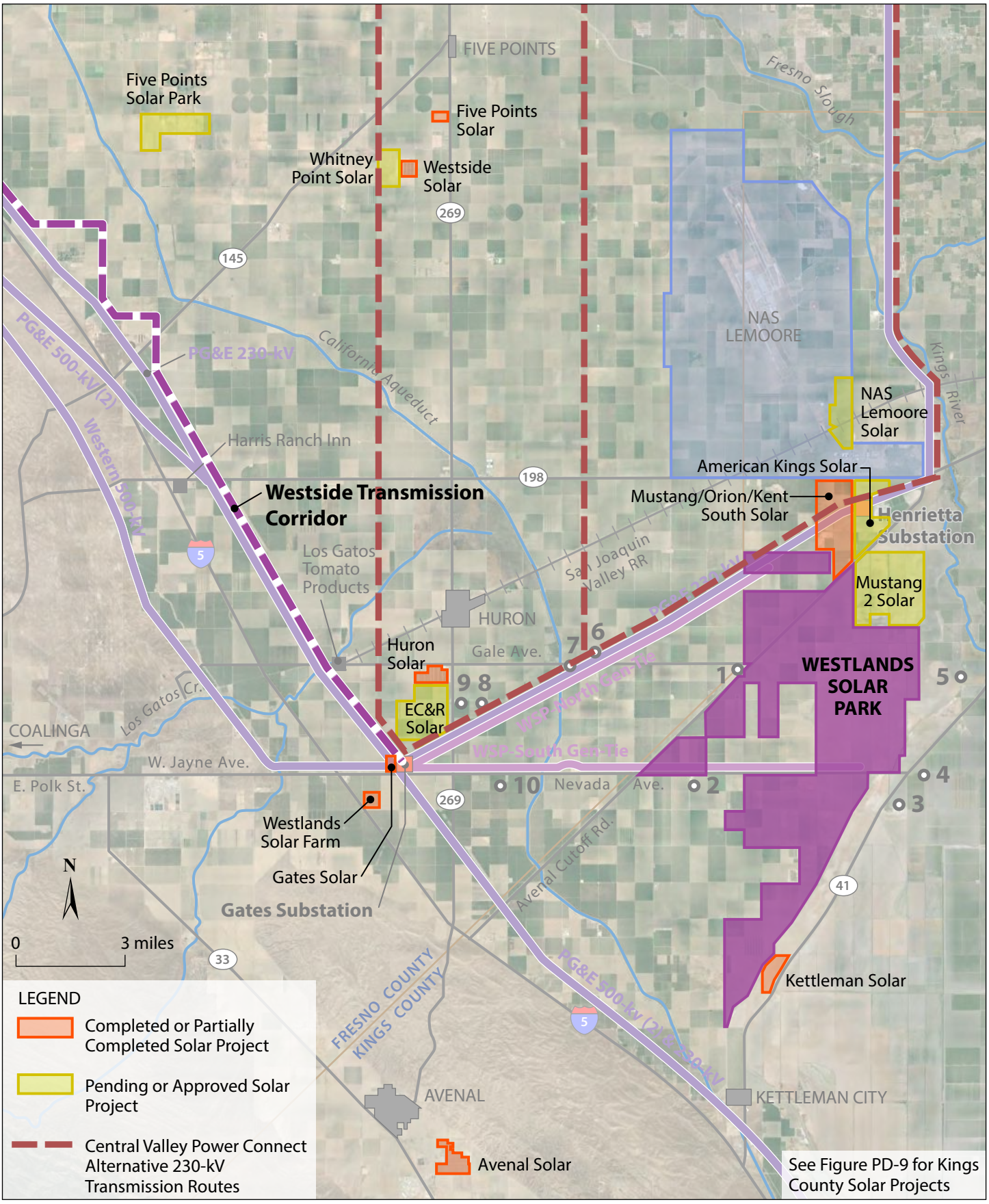
* Projects located within Westlands Solar Park.
Sources: Kings County CDA, WSPH LLC, 2017.

TABLE PD-10

PENDING, APPROVED, AND COMPLETED PROJECTS IN SOUTHWEST FRESNO COUNTY AND NAS LEMOORE

Project	Acreage/ Miles	Generating Capacity (MW)	Status (As of 7/1/17)
Fresno County Solar Projects			
Gates Solar (PG&E)	70 ac.	20	Constructed
Westlands Solar Farms	90 ac.	18	Constructed
Huron Solar (PG&E)	274 ac.	20	Constructed
EC&R Solar	2450 ac.	190	CUPs Pending
NAS Lemoore Solar Project			
NAS Lemoore Solar	930 ac.	134 (167 DC)	Approved (NASL)
Transmission Projects			
Central Valley Power Connect (Gates to Gregg Substation)	63 mi.	NA	Route Planning Stage (On Hold)
Westside Transmission Project (Gates to Dos Amigos Pumping Plant)	69 mi.	NA	Route Planning Stage

Sources: County of Fresno, 2017; CVPC, 2016.



Base map: Google Earth, 2016

Gen-Tie Corridors - Pending, Approved, and Completed Projects

Figure PD-10

This page intentionally left blank

3. ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION MEASURES

Organization of this Chapter

This chapter presents the environmental setting of the project for the various impact categories, and then evaluates potential impacts associated with the Westlands Solar Park Master Plan and WSP Gen-Ties Corridors Plan, and finally identifies feasible mitigation measures, as applicable, to avoid the impacts or to reduce their severity to less-than-significant levels.

Environmental Protection Measures

At the time of construction and operation of the WSP solar facilities and the WSP Gen-Tie projects, it is anticipated that the project proponents will implement Environmental Protection Measures (EPMs) and Construction Standards to minimize environmental effects due to construction, operation, and maintenance activities. Typically, many of these EPMs reflect standard mitigation measures for reducing environmental impacts (e.g., erosion control), while other EPMs address matters that do not rise to the level of a significant impact but reflect regulatory requirements (e.g., mark transmission structures for aviation safety), or best practice guidance (e.g., avian protection from collision or electrocution on power lines), or are otherwise mitigative (e.g., repair roadways and fences damaged during construction). These EPMs are typically identified at the project-specific stage of environmental review and incorporated into construction plans and specifications included as part of construction contract documents. Specific Environmental Protection Measures are not identified at this programmatic level of review but would be established by the project proponent and lead agency at the time of project-specific environmental review prior to project approval for construction. For purposes of this EIR it is assumed that standard EPMs will be implemented during project construction, operation and maintenance.

3.1. AESTHETICS

3.1.1. ENVIRONMENTAL SETTING

Westlands Solar Park

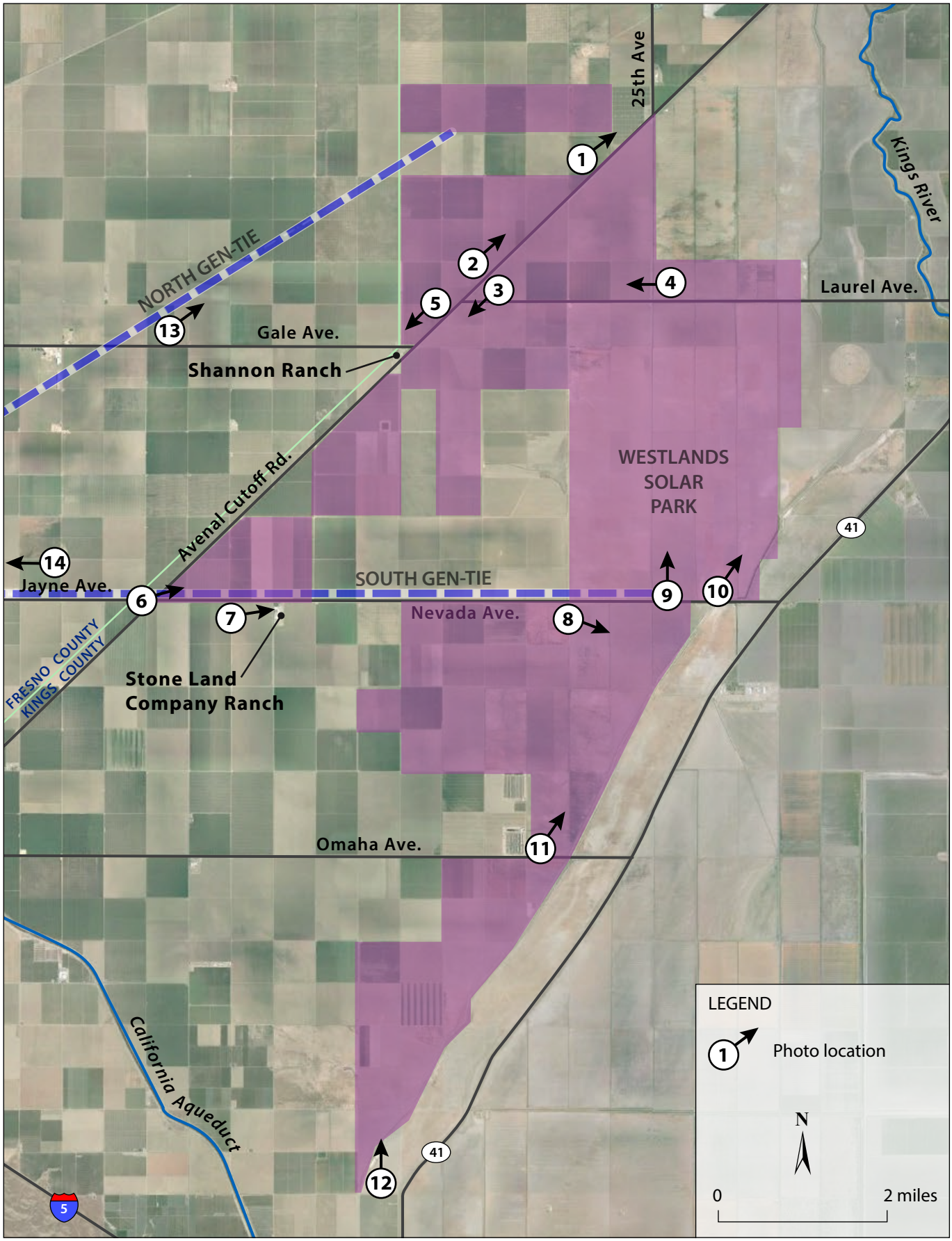
Under current conditions, the entire 21,000-acre WSP plan area appears as agricultural land covered with field crops, fallow land, pasture, and some tree crops. The plan area is essentially level and lacking in topographical features except for irrigation canals and ditches with adjacent levees (see Figures AE-1a through AE-1e). There are no structures within the plan area except for wells, piping and pump works associated with agricultural irrigation. There are no historic structures or rock outcroppings within or near the WSP plan area. The plan area includes a few scattered trees, but none that are visually important or notable. Overall, the plan area has the appearance of having been highly modified for the purpose of large-scale agricultural use and retains little if any of its original natural attributes. The modified character of the plan area is typical of agricultural lands on the west side of the San Joaquin Valley.

The plan area is traversed by several County roads, including Avenal Cutoff Road, Laurel Avenue, and Nevada Avenue. State Highway 41 runs parallel to the southeast plan area boundary at a distance of about ½ mile. A 230-kV power transmission line passes through the northwest corner of the site, and several other electric utility lines run through the plan area. The 230-kV transmission line constitutes the most visually prominent feature within the plan area.

The lands surrounding the plan area are similar in character to the WSP plan area, in that they have been highly modified for purposes of large-scale agricultural cultivation. Adjacent to the plan area, there are two ranch complexes with dwellings, outbuildings, equipment yards, and associated landscaping. The most prominent of these is the Shannon Ranch complex, which is located just outside the plan area at the southwest corner of Avenal Cutoff Road and Lincoln/Gale Avenue, and includes 20 residential units and a number of ranch operations buildings (see Figure AE-1c). The second adjacent ranch is the Stone Land Company Ranch, which is located on the south side of Nevada Avenue, approximately 1.4 miles east of Avenal Cutoff Road, and includes two dwellings (see Figure AE-1d).

Adjacent and nearby lands are the sites of four recently completed solar PV projects, including the Mustang, Orion, and Kent South solar projects located at the northwest corner of Avenal Cutoff Road and 25th Avenue, and the Kettleman solar project located on the west side of SR-41 near the southern end of the WSP plan area (see Figure PD-2 and Figure AE-1b).

There are two major electrical power substations in the WSP vicinity. PG&E's Henrietta Substation is located about one mile north of the plan area on 25th Avenue, and PG&E's Gates Substation is located 6 miles west of the plan area on Jayne Avenue. Several high voltage transmission lines associated with these substations pass through the project area, one of which traverses the northwest corner of the project site, as noted. These facilities represent the most notable structural features of the visual setting of plan area and vicinity.



Source: Google Earth, 2016

Site Photos - Key Map

Figure AE-1a

This page intentionally left blank

VP1: Northward view from Avenal Cutoff Road toward Kent Solar Facility

VP2: Northward view from Avenal Cutoff Road, north of Laurel Ave.

VP3: Southward view from Avenal Cutoff Road, north of Laurel Ave.

Westlands Solar Park - Site Photos

Figure AE-1b

This page intentionally left blank

VP4: Westward view along Laurel Ave., east of 25th Ave.

VP5: Southwestward view of Shannon Ranch from Avenal Cutoff Road

VP6: Eastward view from junction of Avenal Cutoff Road and Nevada Ave.

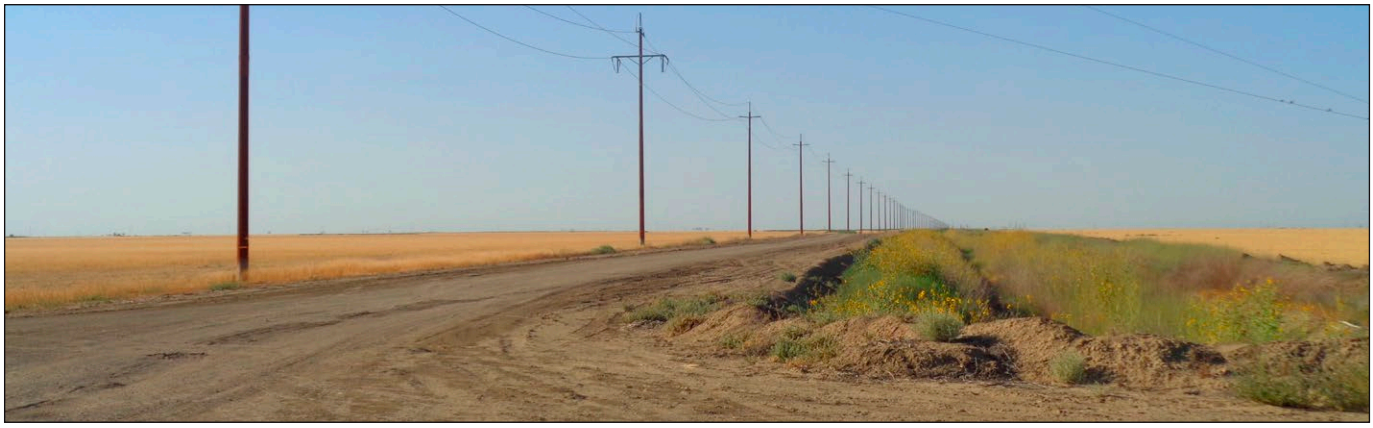
Westlands Solar Park - Site Photos

Figure AE-1c

This page intentionally left blank

VP7: Eastward view of Stone Land Company Ranch from Nevada Ave.

VP8: Southeastward view from Nevada Ave., east of 25th Ave.



VP9: Northward view from Nevada Ave. at 25th Ave.

Westlands Solar Park - Site Photos

Figure AE-1d

This page intentionally left blank

VP10: Northeastward view from Nevada Ave. at east WSP boundary

VP11: Northeastward view from Omaha Ave. near east WSP boundary

VP12: Northward view from southern tip of WSP

Westlands Solar Park - Site Photos

Figure AE-1e

This page intentionally left blank

VP13: Northwestward view of existing PG&E Henrietta-Gates 230-kV transmission line, east of SR-269. The WSP-North to Gates Gen-Tie would run along the southeast (right) side of this transmission line.

VP14: Southwestward view of existing PG&E Henrietta-Gates 230-kV transmission line, west of SR-269. The WSP-North to Gates Gen-Tie would run along the southeast (left) side of this transmission line.

Gen-Tie Corridors - Photos

Figure AE-1f

This page intentionally left blank

The Open Space Element of the 2035 Kings County General Plan describes the important scenic resources of the County. The key landscape features recognized in the Open Space Element include the Kings River located one to two miles east of the plan area, and the foothills and mountains in the southwestern portion of County. The Kettleman Hills rise to an elevation of about 1,200 feet at a distance of approximately 5 miles to 15 miles from the nearest from the nearest plan area boundaries. Beyond these foothills, the first ridge of the Coast Ranges reaches elevations of approximately 4,700 feet at 35 miles from the nearest plan area boundaries. The plan area is not associated with any recognized scenic resources or vistas in the area.

The plan area is at least one mile west of the Kings River and its relatively narrow riparian corridor. At this distance, the WSP plan area is not integral to, nor does it contribute to, the scenic value of the river or its riparian corridor. The Kettleman Hills and the Coast Ranges the west appear as low ridges on the horizon in distant views to the west and southwest, and make up a very small portion of the overall field of view for observers within or near the plan area (see Figure AE-1b – Photo 3). While the long distance views of these ranges from the WSP vicinity provides minor visual interest to the area, the westward views from the WSP plan area could not be characterized as scenic vistas.

There are no State, County or City-designated or proposed scenic highways or routes in the WSP vicinity. The only recognized scenic route in the County is the segment of SR-41 running through the southwest corner of the County as it enters the Coast Ranges at SR-33 and continues southwestward to the Kern County line and then on San Luis Obispo County. None of the roadways in the WSP vicinity are designated or proposed scenic routes.

In summary, the WSP plan area is not visually connected to such recognized scenic resources as the Kings River to the east or the foothills and mountains in the distance to the southwest. The plan area itself is flat and featureless and generally has a low level of visual interest and quality. There are few public roads that traverse or pass within sight of the WSP plan area, and there are very few residential properties with one mile of its boundaries. The combination of low visual quality, limited visual access from public viewpoints, and small number of residential visual receptors indicates that the plan area has low visual sensitivity.

WSP Gen-Tie Corridors

The visual character of the lands surrounding the WSP Gen-Tie Corridors is defined by the rural and agricultural landscapes of the valley floor, with the lower foothills of the Diablo Range forming a visual backdrop to the west (see Figure AE-1f). The agricultural landscapes of the gen-tie corridors include several different cropping patterns, including tree crops, field crops, pasture, and fallow fields, which provide some variety and visual interest. A small number of residential and agricultural support facilities are dispersed throughout the sparsely settled lands in the corridors vicinity. There are no historic buildings, rock outcroppings, or other scenic resources within or near the gen-tie corridors. The gen-tie corridors include a few scattered non-orchard trees, but none that are considered scenic resources.

The rolling foothills to the west of the valley are covered with annual grasses with few trees. While the views of the foothills provide amenity and visual relief from the flat topography of the valley floor, the scenic value of the foothills is reduced by lack of visual contrast and limited variety of landscape features.

Due to the relatively arid conditions along the eastern slope of the Coast Ranges, the creeks and streams that drain from the foothills to the valley floor produce only seasonal flows. The nearest creek to the gen-tie corridors is Los Gatos Creek which passes at least 4 miles to the northwest and is not visible from the gen-tie corridors.

The dominant built forms in the vicinity of the gen-tie corridors consist of large infrastructure facilities such as the I-5 freeway, the California Aqueduct, and multiple high voltage transmission tower lines which converge on the Gates substation (see Figure PD-7). The gen-tie corridors cross SR-269 and County roads such as Nevada/Jayne Avenues, Gales Avenue, and Avenal Cutoff Road. The southern gen-tie corridor is entirely visible from Nevada/Jayne Avenues to which it runs parallel. The northern gen-tie corridor runs diagonally through the area, so visibility of this corridor is limited to the vicinity of the crossing points at Gales Avenue and SR-269.

There are no State-designated or proposed scenic highways or routes in the vicinity of the gen-tie corridors. The nearest State highway that has been determined to be eligible for designation as a State scenic highway is the segment of SR-198 from I-5 west to the Monterey County line (Caltrans 2011). The northern gen-tie corridor is located at least 10 miles southeast of that scenic highway segment at its nearest point.

There are no urban or rural communities in the immediate vicinity of the gen-tie corridors. The nearest urbanized area is the City of Huron which is located 3 miles northwest of the northern gen-tie corridor. There are a total of 20 rural dwellings located within one mile of the gen-tie corridors. There are no urban or rural communities in the vicinity of the gen-tie corridors. There are 10 rural dwellings located along the south side of Nevada/Jayne Avenues, all of which are located from 125 to 180 feet from the southern gen-tie corridor (see Figure PD-7). The rural dwellings in proximity to the northern gen-tie corridor are located from 2,000 to 5,000 feet from the corridor.

In summary, the gen-tie corridors pass entirely through flat agricultural landscapes where scenic value is limited but somewhat enhanced by the visual backdrop formed by the foothills to the west. Thus the visual quality of the gen-tie corridors vicinity is moderate, albeit somewhat aesthetically diminished by the large infrastructure elements that run through it. Visual access to the gen-tie corridors is available to the public mainly via several county roads and one state highway. The gen-tie corridors are also visible to varying degrees from 20 dwellings located within one mile of the corridors. Over a total distance of 23 miles covered by the gen-tie corridors, this represents an average of one dwelling per mile of transmission corridor. Thus visual accessibility to the gen-tie corridors is moderate for motorists and low to high residential viewpoints, indicating that overall visual accessibility of the gen-tie corridors is moderate. The combination of moderate visual quality and moderate visual accessibility indicates that the overall visual sensitivity of the gen-tie corridors is moderate.

3.1.2. REGULATORY SETTING

State

California Scenic Highway Program

California's Scenic Highway Program was created in 1963 to preserve and protect scenic highway corridors from change which would diminish the aesthetic value of lands adjacent to highways. The State Scenic Highway System includes a list of highways that are either eligible for designation as scenic highways or have been so designated. A highway may be designated as "scenic" depending on how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the travelers' enjoyment of the view.

Within Kings County, there is one highway segment which is designated by the state as an eligible scenic highway. This segment comprises an 8-mile stretch of SR-41 extending southwest of SR-33 to the Kern County line and then on San Luis Obispo County. This scenic highway segment is located 11 miles south of the WSP plan area and 17 miles south of the southern gen-tie corridor at their nearest points (Caltrans 2011).

In western Fresno County, the segment of SR-198 extending west from I-5 to the Monterey County line is designated by the state as an eligible scenic highway. This highway segment is 33 miles long in Fresno County, and its eastern terminus is located 10 miles northwest of the northern gen-tie corridor and 15 miles northwest of the WSP plan area at their nearest points (Caltrans 2011).

Kings County

Kings County General Plan

The 2035 Kings County General Plan contains the following goals, objectives and policies related to aesthetics which are relevant to the project.

Open Space Element

B. Scenic Resources

OS GOAL B1 *Maintain and protect the scenic beauty of Kings County.*

OS OBJECTIVE B1.2 *Preserve roadside landscapes which have high visual quality and contribute to the local environment.*

OS Policy B1.2.1 Review new development and utility projects for compatibility and potential for impacting scenic view sheds along highly traveled scenic routes.

OS OBJECTIVE B1.3 *Preserve roadside landscapes which have high visual quality and contribute to the local environment.*

OS Policy B1.3.1 Require new development to be designed so that it does not significantly impact or block view of Kings County's natural landscape or other important scenic features. Discretionary permit applications will be evaluated against this requirement as part of the development review process. New developments may be required, as appropriate to:

- Minimize obstruction of views from public lands and rights-of-way.
- Reduce visual prominence by keeping development and structures below ridgelines.
- Limit the impact of new roadways and grading on natural settings. Such limits shall be within design safety guidelines.

Kings County Development Code

Under Development Code, *Article 4. Agricultural Zoning Districts*, the northern-most portion of the plan area is zoned "AX Exclusive Agricultural," and the remainder of the plan area is within the "AG-40 General Agricultural-40" zone district. Both zoning districts allow commercial solar photovoltaic electrical generating facilities as conditionally permitted uses subject to approval by the Planning Commission. Under Article 17 of the Development Code, applications for Conditional Use permits are to include Site Plans prepared with information prescribed Section 1602, including detailed site plans.

Transmission projects that are to be constructed or co-sponsored by an investor-owned utility (IOU) such as PG&E are subject to the sole permitting jurisdiction of the California Public Utilities Commission (CPUC) and are exempt from local jurisdiction. However, CPUC General Order 131-D requires public utilities to coordinate with local jurisdictions regarding consistency of their projects with local plans and policies (CPUC 1994). Transmission lines that may be privately owned (such as non-IOU-owned gen-ties) are not under CPUC jurisdiction, and thus are subject to Kings County jurisdiction and may require the issuance of a conditional use permit from the County.

Fresno County

Since no portion of the Westlands Solar Park is located within Fresno County, the County's plans, policies and regulations are not applicable to WSP solar development. As discussed above for Kings County, any segments of the gen-ties that are not owned by a public utility (and thus not under CPUC jurisdiction), would be subject to Fresno County jurisdiction and may require the issuance of a conditional use permit from the County.

Fresno County General Plan

The Fresno County General Plan contains the following goals and policies related to aesthetics which are relevant to the project.

K. Scenic Resources

GOAL OS-K *To conserve, protect, and maintain the scenic quality of Fresno County and discourage development that degrades areas of scenic quality*.

Policy OS-K.1 The County shall encourage the preservation of outstanding scenic views, panoramas, and vistas wherever possible. Methods to achieve this may include encouraging private property owners to enter into open space easements for designated scenic areas.

Policy OS-K.4 The County should require development adjacent to scenic areas, vistas, and roadways to incorporate natural features of the site and be developed to minimize impacts to the scenic qualities of the site.

L. Scenic Roadways

GOAL OS-L *To conserve, protect, and maintain the scenic quality of land and landscape adjacent to scenic roads in Fresno County*.

Policy OS-L.1 The County designates a system of scenic roadways that includes landscaped drives, scenic drives, and scenic highways. Definitions and designated roadways are shown in the text box below. Figure OS-2 shows the locations of the designated roadways.
[Note: The text box identifies the following Fresno County Designated Scenic Highways in the vicinity of the Westlands Solar Park and the WSP Gen-Tie Corridors:

- SR-198 from I-5 to the Monterey County line (this segment has also been determined to be eligible for State Scenic Highway Designation)
- I-5 within Fresno County

Policy OS-L.3 The County shall manage the use of land adjacent to scenic drives and scenic highways based on the following principles.
*
b. Proposed high voltage overhead transmission lines, transmission line towers, and cell towers shall be routed and placed to minimize detrimental effects on scenic amenities visible from the right-of-way.

3.1.3. ENVIRONMENTAL IMPACT ANALYSIS

SIGNIFICANCE CRITERIA

Based on the State CEQA Guidelines, Appendix G, the project would be considered to have a significant aesthetic impact if it would:

a. Have a substantial adverse effect on a scenic vista. (Impact AES-1)

b. Substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway. (Impact AES-2)

c. Substantially degrade the existing visual character or quality of the site and its surroundings. (Impact AES-3)

d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area. (Impact AES-4)

IMPACTS AND MITIGATION

Impact AES-1. Substantial Adverse Effect on a Scenic Vista

***Westlands Solar Park*. The WSP plan area is not part of a recognized scenic vista, nor are scenic vistas visible from the WSP plan area; therefore, the WSP solar development would not have a substantial adverse effect on a scenic vista. (*Less-than-Significant Impact*)**

***WSP Gen-Tie Corridors*. The WSP Gen-Tie Corridors are not part of a recognized scenic vista, nor are scenic vistas visible from the gen-tie corridors vicinity; therefore, the WSP gen-tie lines would not have a substantial adverse effect on a scenic vista. (*Less-than-Significant Impact*)**

This impact analysis addresses significance criterion 'a' above.

Westlands Solar Park

The WSP plan area consists of essentially flat agricultural land and is typical of the west side of the valley floor, with no topographic variation or features to provide visual interest or vantage points for panoramic views. The nearest locally significant scenic resource is the Kings River corridor which is located approximately 1 to 2 miles east of the plan area, and not within view of the plan area. The only scenic vistas within view of the plan area are of the Kettleman Hills and Coast Ranges to the west and southwest, which are located 5 to 15 miles from the plan area. The WSP's solar arrays would not exceed 10 feet in height, and thus would not block views of the hills and mountains, nor would they have a substantial effect on long-distance views from the hills and mountains. As such, the WSP solar development would not result in a substantial adverse effect on a scenic vista. Therefore, the project impacts on scenic vistas would be *less than significant*.

WSP Gen-Tie Corridors

The WSP gen-tie lines would run through agricultural lands with low to moderate visual sensitivity. The northern gen-tie line would run adjacent to existing 230-kV transmission lines through sparsely settled agricultural lands where the nearest residences are at least 2,000 feet away. Given that the northern gen-tie would not introduce new structural forms to the scene but would add incrementally to forms already present, it would not result in a substantial adverse effect on a scenic vista. Therefore, the impacts of the WSP-North to Gates Gen-Tie on scenic vistas would be *less than significant*.

The WSP-South to Gates Gen-Tie line would run adjacent to Nevada/Jayne Avenue for approximately 11.5 miles. The gen-tie line would add a new structural element to the roadside view along this roadway, and

would represent a substantial visual change. However, the existing visual quality along Nevada/Jane Avenue is low, consisting entirely of flat featureless agricultural lands with little variation or visual interest. There are long distance views toward the foothills to the west, but these cannot be characterized as scenic vistas. Therefore, the impacts of the WSP-South to Gates Gen-Tie on scenic vistas would be *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

Impact AES-2. Substantially Damage Scenic Resources

***Westlands Solar Park*. The WSP plan area does not include scenic resources such as trees, rock outcroppings, historic buildings, or other scenic features, and is not near a State scenic highway; therefore, the WSP solar development would not substantially damage scenic resources. (*Less-than-Significant Impact*)**

***WSP Gen-Tie Corridors*. The WSP Gen-Tie Corridors vicinity does not include scenic resources such as trees, rock outcroppings, historic buildings, or other scenic features, and is not near a State scenic highway; therefore, the WSP gen-tie lines would not substantially damage scenic resources. (*Less-than-Significant Impact*)**

This impact analysis addresses significance criterion 'b' above.

Westlands Solar Park

Under this criterion, a significant impact would occur if the project would result in substantial damage scenic resources such as trees, rock outcroppings, or historic buildings within a state scenic highway. As discussed in Section *3.1.1. Environmental Setting*, there are no historic buildings, rock outcroppings, or notable trees that would comprise scenic resources within or near the WSP plan area.

The nearest State highway that has been determined to be eligible for designation as a scenic route is the segment of SR-41 running southwest from SR-33 to the Kern County line. This segment of scenic highway is located 11 miles from the WSP plan area at its nearest point. This scenic road segment is located on the west side of the Kettleman Hills which would block any views of the plan area from this scenic road segment. Therefore, the WSP solar development would not alter views from this scenic road segment.

The Kings River, which is located 1 to 2 miles east of the WSP plan area, is a recognized scenic resource in the Kings County General Plan. However, the Kings River is not visible from the nearest areas of the WSP plan area, and the low profile solar arrays within the WSP would not be visible from the Kings River or its

adjacent riparian areas. Therefore, the WSP solar development would not affect the scenic qualities of the Kings River.

In summary, the impact of WSP solar development upon scenic resources would be *less than significant.*

WSP Gen-Tie Corridors

The gen-tie corridors are similar to the WSP plan area in that there are no historic buildings, rock outcroppings that would comprise scenic resources that could be damaged by the gen-tie projects. The valley floor in the vicinity of the gen-tie corridors is generally lacking in mature non-orchard trees apart from landscape trees at ranch complexes and other residences.

The nearest State highway that has been determined to be eligible for designation as a scenic route is the segment of SR-198 from I-5 west to the Monterey County line. The northern gen-tie corridor is located 10 miles southeast of that scenic highway segment at its nearest point, where it would not be visible from that highway segment.

In summary, the WSP Gen-Tie Corridors would not substantially damage scenic resources such as historic buildings, trees, or rock outcroppings, and would not have a substantially adverse effect on any designated or designation-eligible scenic routes. Therefore, the impact of the gen-tie corridors upon scenic resources would be *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

Impact AES-3. Substantially Degrade Existing Visual Character and Quality

***Westlands Solar Park*. The WSP solar development would result in changes to the visual character of the plan area; however, these changes would not substantially degrade the existing visual character or quality of the site and its surroundings. (*Less-than-Significant Impact*)**

***WSP Gen-Tie Corridors*. The WSP gen-tie corridors would result in changes to the visual character of the plan area; however, these changes would not substantially degrade the existing visual character or quality of the corridors and their surroundings. (*Less-than-Significant Impact*)**

This impact analysis addresses significance criterion 'c' above.

Westlands Solar Park

Visual Characteristics of Project Elements

The development of the WSP plan area with solar PV generating facilities would result in the conversion of much of the plan area from agricultural fields to solar fields and supporting structures. The solar facilities would consist mainly of solar arrays, along with supporting infrastructure, substations, power collection and transmission lines, and security fencing.

The solar arrays would constitute the dominant visual element of the WSP, although the arrays would be low in profile, rising to a height of up to 8-10 feet at maximum angle of tilt for the horizontal tracker units. The rows of solar panels would each be separated by about 10 -14 feet of open space to prevent them from shading each other, which would reduce their visual density. The ground between and beneath the solar panels would be revegetated with native ground cover which would provide a naturalized context to visually soften the structural elements and maintain a visual connection with the rural setting.

Other elements of the solar generating facilities would include intermittently spaced inverter/transformer pads, which would be up to 10- to 12-feet high, and would extend a foot or two above the solar arrays at their maximum tilt. Each solar facility would include one or two small structures for operations and maintenance.

Each SGF would include a system of overhead power collection lines to transfer power from the combining switchgear to the project substations. The power lines would be strung on wooden poles about 45 feet high.

The largest structures would consist of substations with some elements reaching 100 feet or more in height. It is estimated that there would be a total of 8 substations dispersed throughout the WSP plan area. The power from the substations would be transferred to transmission tie-lines to be fed into the regional power grid. These high-voltage transmission corridors would consist of steel monopoles up to 150 feet tall. A portion of these high voltage transmission corridors would run through the WSP plan area, specifically along the north side of Nevada Avenue, and also in a north-south direction along the 25th Avenue alignment.

Each solar development project within WSP would include staging and laydown areas, several of which would be active at any given time. The staging areas would include construction trailers, storage areas for equipment and project components, and temporary enclosures for panel assembly, as well as security fencing and lighting.

Construction activity within the WSP plan area would occur over a number of years and would be ongoing concurrently with operation of the solar facilities completed in the initial years of development. Within each solar project, construction would be ongoing at several locations within the SGF site at any given time, and would include grading and trenching, assembly and installation of solar panels, and construction of support facilities, substations, and power lines.

Each solar facility within the WSP would be enclosed by security fencing. The fencing would consist of 6- to 8-foot high chain-link fencing with three strands of barbed wire on top. The perimeter fencing would be installed along the rights-of-way of public roadways and would run as near as 18 feet to the paved portion of the roadway (along a typical County road with a 60-foot right-of-way). The nearest solar arrays would be setback at least 35 feet from the roadway right-of-way, or at least 53 feet from the nearest travel lane on the adjacent roadway.

Upon full buildout of the WSP plan area, the overall visual appearance of the plan area, as viewed from public roadways traversing the plan area, would be as follows. The foreground views would include the security fencing with solar arrays visible through the fence within a field of low-growing grasses. Given the flatness of the terrain, objects in the foreground would tend to screen objects of similar size in the background. In the distance within the solar fields, the larger structural elements such as inverters/transformers, power collection poles, and maintenance buildings would be visible. The largest elements such as substations and transmission tie-lines would be visible. The overall visual effect to passersby would be of a predominantly low profile facility of uniform height (about 10-12 feet) with the medium-height structures such as inverters/transformers appearing intermittently throughout, and the higher structures such as substations and transmission towers appearing much less frequently.

Visual Effects of WSP Solar Facilities

Visual impacts are evaluated in terms of the visual quality of the project setting, and project's effects upon those who are subject to the visual changes resulting from a proposed activity. As discussed in Section *3.3.1. Environmental Setting*, the WSP plan area is flat and featureless and generally has a low level of visual interest and quality. There are few public roads that traverse or pass within sight of the plan area, and there only two rural dwellings with direct views into the plan area. The combination of low visual quality and very small number of visual receptors indicates that the project site has low visual sensitivity.

Given the very sparsely settled nature of the WSP vicinity, the primary observers or visual receptors would be travelers on the public roadways passing through and alongside the WSP solar facilities. The effects of the visual changes resulting from the WSP solar development are discussed below, first in general terms, and then in specific terms from the vantage points of the various receptors.

General Visual Effects

Upon completion of the project, the visual character of the site would be altered from a predominantly rural agricultural character to one where structural elements are visually dominant. The solar arrays which would occupy the vast majority of the plan area would be low in profile and relatively uniform in height. The taller and larger structural elements, such as substations and transmission tower lines, would make up a small portion of the overall solar projects (see Figure AE-1b (photo 1)).

The specific visual effects of the project upon visual receptors traveling along public roadways and at existing dwellings are discussed below.

Visual Effects along Public Roadways

The public roadways traversing the site include Avenal Cutoff Road, Laurel Avenue, Nevada Avenue, as well as short segments of other County roads such as Lincoln/Gale Avenue, and 30th Avenue. In addition, SR-41 runs parallel to the southeast portion of the plan area at a distance of about one-half mile from the

nearest WSP boundary. All other public roadways, including SR-198 to the north, are at least two miles from the plan area. Interstate 5 passes through the region to the southwest, at a distance of about 2.2 miles from the southern tip of the plan area at the nearest point; however, over 90 percent of the project site is 6 miles or farther from I-5 as it heads off to the northwest.

Avenal Cutoff Road. Upon project buildout, the 8-mile segment Avenal Cutoff Road bisecting the project site would have solar arrays along both sides of the road for the northeastern 4 miles. Along the southwestern 4-mile segment, the solar arrays would be installed only on the east side of the roadway. The solar arrays would be oriented north-to-south, while Avenal Cutoff Road is oriented northeast-to-southwest, so the arrays would not follow the roadway in a near-continuous parallel line. Instead, the arrays would appear to move in an out from the roadway in an irregular sawtooth pattern with triangular open space parcels of varying sizes appearing along the roadway. The setback distance of the solar panels from the paved portion of the roadway would vary from about 60 feet to over 200 feet, which would provide visual relief and variation along the roadside. Since Avenal Cutoff is the heaviest traveled roadway through the WSP plan area, this irregular pattern of solar arrays would help reduce the visual uniformity of the solar arrays along the roadside.

Laurel Avenue. The western segment of Laurel Avenue extends for approximately 4 miles through the northeast portion of the plan area. Solar arrays would be installed along both sides of the roadway for this distance. Since Laurel Avenue is an east-west roadway, the solar arrays would be installed in rows perpendicular to the roadway. This would avoid the appearance of a solid wall of arrays as would occur with fixed-tilt arrays which would be oriented parallel to the roadway. (The WSP solar projects are expected to employ only horizontal tracker arrays, which follow the sun across the sky, and thus are oriented in north-south rows instead of south facing rows typical of fixed tilt arrays.) Along the south side of Laurel Avenue, a large irrigation canal running parallel to the roadway would provide a setback of at least 150 feet from the nearest solar facilities. In addition, this segment of Laurel Avenue is very lightly traveled, which reduces its overall visual sensitivity.

Nevada Avenue. Nevada Avenue traverses the central portion of the plan area between Avenal Cutoff Road and SR-41, a distance of 7.5 miles. The eastern segment (about 2 miles) would have solar arrays installed on both sides of the roadway, while the central segment (2 miles) would have solar arrays installed only on the south side of the roadway, and the western segment (1.9 miles) near Avenal Cutoff Road would have solar panels installed along the north side only. As with Laurel Avenue to the north, the solar arrays would be installed in rows perpendicular to the roadway. This would avoid the appearance of a solid wall of arrays as would occur with fixed-tilt arrays which would be oriented parallel to the roadway. In addition, this segment of Nevada Avenue is very lightly traveled, which would reduce overall viewer exposure.

State Route 41. SR-41 runs parallel to the southeastern WSP boundary for a distance of about 9 miles, with the WSP boundary set back 0.5 to 0.7 miles from the highway for this entire distance. Given the low profile and uniform height of the solar arrays, the nearest panels would be just visible to travelers along SR-41, with larger elements such as substations and power poles being more visible in the distance. Therefore, overall visual change to this travel corridor would be noticeable but minor.

Interstate 5. The southernmost tip of the WSP plan area is 2.2 miles from I-5, but the major portion of the plan area (over 90 percent) is at least 6 miles from freeway as it heads northwest. Since the nearest

segment of I-5 is elevated relative to the valley floor, long distance views are available toward the plan area. However, given the distances separating most of the plan area from I-5, the WSP solar arrays would be barely discernable to travelers on the freeway, and the visual effect would be minimal.

Visual Effects from Residential Vantage Points

As noted previously, there are no residential properties within the plan area. In the immediate vicinity of the WSP boundary there are 2 groups of existing dwellings, including: Shannon Ranch located at the southwest corner of Avenal Cutoff Road and Lincoln/Gale Avenue; and the Stone Land Company Ranch located on the south side of Nevada Avenue approximately 1.4 miles east of Avenal Cutoff Road. These and other rural dwellings in the vicinity are shown in Figure PD-2, and discussed below.

Shannon Ranch. Located at the southwest corner of Avenal Cutoff Road and Lincoln/Gale Avenue, the ranch includes 20 single-family residences along with a number of operations buildings (e.g., office, machine shop, storage barns, etc.). The WSP solar arrays would be installed on the east side of Avenal Cutoff Road opposite the Shannon Ranch, and also along the north side of a short segment of Lincoln/Gale Avenue extending approximately 700 feet west of Avenal Cutoff Road. Six of the Shannon Ranch residences are located along the Avenal Cutoff Road frontage and would be approximately 200 feet from the nearest solar arrays across the road to the east. Along this frontage, densely planted and tall landscaping provides full visual screening from the roadway and the planned solar arrays beyond (see Figure AE-1c (photo 5).

Along the north ranch frontage on Lincoln/Gale Avenue, there is one existing dwelling located directly across the roadway from the project site. This dwelling would be located approximately 130 feet from the nearest solar arrays within the plan area. Due to the lack of substantial landscaping in the front yard of this dwelling, it would have unobstructed views of the solar arrays directly across Lincoln/Gale Avenue. However, the visual effect of the solar development upon this residence would be reduced by the distance separation and the relatively low profile of the solar panels.

There are another four dwellings fronting onto Lincoln/Gale Avenue in the western portion of the ranch complex that would have partial oblique views of the nearest solar located from 400 to 700 feet to the northeast. These views would be largely screened by existing landscape trees in the front yards of these dwellings. The remaining 9 residences front onto an internal ranch driveway that extends south from Lincoln/Gale Avenue and passes through the ranch interior to Avenal Cutoff Road. These dwellings would be located from 400 to 800 feet from the nearest solar arrays to the northeast, and 300 to 700 feet from the nearest solar arrays to the southeast. Although some solar arrays may be obliquely visible from these dwellings across the ranch equipment yard, much of this visibility would be screened by landscape trees associated with these residences, as well as dense landscaping along portions of the ranch frontages along Lincoln/Gale Avenue and Avenal Cutoff Road.

In summary, the visual effects of the WSP solar development upon the 20 existing residences in the Shannon Ranch complex would be reduced due to the distances separating the Shannon Ranch dwellings from the solar arrays, and would be further minimized by existing landscaping that screens the sightlines between these dwellings and plan area. The overall visual effect of the project upon the Shannon Ranch dwellings would be minor.

Stone Land Company Ranch. This ranch is located on the south side of Nevada Avenue approximately 1.4 miles east of Avenal Cutoff Road. The ranch includes 2 single-family dwellings that are each located approximately 150 feet from the roadway centerline, and would be at least 215 feet from the nearest solar arrays. The views of the solar arrays from these dwellings would be largely screened by a number of existing mature landscape trees planted in the front yards of these dwellings (see Figure AE-1d [Photo 7]). Given the distance separating these two residences from the nearest solar arrays, and the visual screening provided by the existing residential landscaping at the ranch, the visual effect of the solar arrays upon these ranch dwellings would be minor.

Other Residences in the Project Vicinity. In addition to the adjacent ranches discussed above, there are 12 dwellings (in 3 groups) located within one mile of the WSP boundary. This are shown in Figure PD-2, and listed in Table PD-7 as residential groups #3, #4, and #5. Residential group #3 consists of 4 dwellings at the Westlake Farms complex located 0.75 miles east of the WSP plan area on the east side of SR-41, south of Nevada Avenue. Residential group #4 consists of 2 ranch dwellings located 0.5 miles east of the WSP plan area at the east end of Nevada Avenue east of SR-41. Ground-level views from these ranch dwellings to the west are obstructed by the levees associated with Blakely Canal and Empire Westside Ditch, as well as the raised roadbed of SR-41, which all run between the WSP plan area and these residences. Given the distance and the view obstructions between the WSP plan area and the residences, the low profile solar arrays within the plan area would not be visible from these ranch dwellings, although the taller structural elements such as gen-tie towers or substations may be partially visible in long-distances views from these locations.

Residential group #5 comprises 5 dwellings located along and near 22nd Avenue, which are located at distances of 1.0 to 1.4 miles from the eastern WSP boundary. At these distances, some solar facilities, such as the taller structural elements of the substations or the gen-tie towers, might be visible, but the lower profile solar arrays would not be visible. The overall effect of the WSP solar facilities on views from these residences would be negligible at these distances.

Visual Effects of Construction Activity

Construction activity associated with the WSP solar facilities would involve ongoing visual changes over a period of years. The dominant visual features associated with construction would be the staging and laydown areas, as well as concentrations of equipment and construction workers at active construction sites, and movement of delivery vehicles and equipment. Construction activity would sometimes occur in proximity to roadways and residences. However, since solar arrays are installed at a rapid pace, the construction activity would constantly move over the landscape, so construction would occur for short periods at any given location. Thus, while construction over the entire WSP plan area may take a number of years, the visual effects associated with construction activity at any given location would be temporary and relatively brief in duration. The potential visual impacts associated with WSP construction activity would be *less than significant*.

Summary and Conclusion – Visual Impacts Resulting from WSP Solar Development

Upon full buildout of the WSP solar facilities, the visual character of the plan area would be altered from a predominantly rural agricultural character to one where structural elements are visually dominant, albeit generally low in profile. While this represents a substantial visual change, the level of impact of this

change depends on the visual sensitivity of the setting, as determined by its existing visual quality, combined with the specific visual effects upon receptors who would be affected by the visual change.

As discussed in Section *3.1.1. Environmental Setting*, the WSP plan area has been highly modified from its original natural state and is generally absent of non-agricultural vegetation or other natural attributes. The site is essentially flat and featureless, and lacks scenic resources. Overall, the WSP plan area has low visual quality, with its dominant visual characteristic being its flatness and almost total absence of trees and structures.

The various elements of the WSP solar facilities would be visible along roadways passing through and along the plan area, and from existing dwellings adjacent to the plan area. However, the principal project elements – the solar arrays – are low in profile and non-obtrusive. The larger structural elements such as electrical substations and gen-tie lines would be visually prominent, but would comprise a very small portion of the overall visual effect of the solar facilities. From available public viewpoints, the overall visual effect would be of low-profile facilities, with occasional higher profile elements dispersed over a large area.

There are two general groups of visual receptors who would be subject to the changes resulting from WSP solar development. The first group consists of occupants of residences within visual range of the WSP solar facilities; and the second group comprises travelers along public roadways passing through the WSP plan area. For the few existing dwellings that have direct visibility into the WSP plan area, the views of the solar facilities would be largely screened by existing landscaping on the residential properties themselves, with the visual effects further diminished in some instances by distances separating the dwellings from the solar facilities. Given also the generally low profile of the solar arrays that would be installed in proximity to the existing nearby dwellings, overall visual effect on residential receptors in the project vicinity would be minor or negligible.

For travelers along the public roadways passing through the project site, the visual effect of the solar arrays themselves would be reduced by their relatively low profile and by the fact that open space would be maintained between, under, and around the solar panels. While the larger structural elements would still be visible, they would be few in number and dispersed, thus reducing their overall visual effect. Since there are no elevated vantage points for distant or panoramic views into or over the solar fields, the visual perception of WSP's overall scale would be limited. Thus while regular travelers passing through the plan area would notice a visual change to the site character, the magnitude of that change would be relatively small. Additionally, the travelers would not be subject to degradation of scenic resources or blockage of scenic views since these visual attributes are not present under current conditions. As such, the overall visual impact of the project upon travelers passing through it would not be significant.

In summary, the WSP solar development would result in a visual change to the character of the plan area. However, the low visual quality of the WSP plan area, the very small number of residences in the immediate WSP vicinity, and limited visual access along relatively lightly traveled roadways, all indicate that the WSP plan area has low visual sensitivity. Given the generally low profile and unobtrusive character of the WSP solar facilities, in the context of the low sensitivity of the visual setting, it is concluded that the visual changes resulting from the WSP solar development would not substantially degrade the existing visual character or quality of the site and its surroundings, and that the visual impact would therefore be *less than significant*.

WSP Gen-Tie Corridors

Visual Characteristics of Gen-Tie Lines

The gen-tie tower lines would constitute the dominant visual element of the WSP Gen-Tie projects. The towers are planned to consist entirely of tubular steel monopoles, which would be up to 150-feet tall. Conductors would be strung between the towers which would be spaced and intervals of up to about 1,300 feet. The gen-tie projects would also include improvements at the existing Gates substation, but since these improvements would be made within the existing substation, the resulting visual effects would be negligible. The gen-tie projects would also involve the construction of temporary access driveways, establishment of temporary staging areas and temporary pulling and tensioning sites. Since these construction-related features would be temporary and short-lived, the visual effects associated with these temporary features are considered minimal. Therefore, the primary focus of this analysis is on the visual effects of the transmission tower lines.

Visual Effects of Gen-Tie Lines

Visual impacts are evaluated in terms of the visual quality of the project setting, and the project's effects upon those who are subject to the visual changes resulting from a proposed activity. As discussed in Section *3.3.1. Environmental Setting*, the gen-tie corridors would pass entirely through flat agricultural landscapes where scenic value is limited but somewhat enhanced by the visual backdrop formed by the foothills to the west. Thus the visual quality of the west side of the valley floor is moderate, albeit somewhat aesthetically diminished by the large infrastructure elements that run through it (e.g., California Aqueduct, I-5 freeway, multiple transmission lines). Visual access to the gen-tie corridors is available to the public via several county roads and a state highway. The corridors are also visible from 20 dwellings located within one mile of the corridors, of which 10 dwellings are located within 125 to 180 feet of the southern gen-tie corridor. Thus visual accessibility to the gen-tie corridors is relatively moderate for motorists and low to high from residential viewpoints, indicating that overall visual accessibility of the valley corridor segments is moderate. The combination of moderate visual quality and moderate visual accessibility indicates that the overall visual sensitivity of the gen-tie corridors is moderate.

General Visual Effects

In general, the introduction of a transmission tower line to a natural landscape would result in high visual contrast between the natural setting and the introduced structural forms. The visual effect is somewhat reduced by the small visual mass of the tower lines, especially at a distance, since they essentially consist of monopole structures supporting a series of overhead electrical cables. The planned gen-tie corridors are located directly adjacent to existing transmission lines along over 50 percent of their overall length, with the remaining segments running entirely along existing roadway corridors. The addition of a second tower line to the existing transmission corridors represents an incremental visual change to a setting where tower lines are already present, and would not represent a substantial change to the visual character and quality of the setting. The addition of a new line of narrow-profile monopoles along an existing transportation corridor would represent a noticeable change to the visual setting, but would not represent a substantial change to the visual character and quality of the setting.

The specific visual effects of the gen-tie projects upon visual receptors traveling along public roadways and at existing dwellings are discussed below.

Visual Effects along Public Roadways

Nevada/Jayne Avenue. As mentioned, the WSP-South to Gates Gen-Tie line would run along the north side of Nevada Avenue in Kings County, which becomes Jayne Avenue in Fresno County, for a total distance of 11.5 miles. It is anticipated that steel monopoles would be utilized along the entire length of the gen-tie line. Nevada and Jayne Avenues are lightly traveled roadways which mainly serve local traffic. Since there is no existing transmission line along this roadway corridor, the planned gen-tie would add a new linear structural element to the setting. However, the use of steel monopoles would minimize the visual profile of the gen-tie line. At the west end of this corridor, several major transmission lines converge at the Gates Substation, which itself is a large and prominent structural element in the landscape. Given the generally low quality of the agricultural landscape in this area, as discussed previously, and the relatively small number of motorists who use this travel corridor, as well as the presence of a major regional substation with converging transmission lines at the west end of this corridor, and considering that low-profile monopoles would likely be utilized, this gen-tie line would not result in a substantial change to the visual character and quality of the setting. Therefore, the visual impact to the public of the planned transmission tie-line along Nevada/Jayne Avenue would be *less than significant*.

Other Roadways. As discussed, several other county roads and a state highway cross the gen-tie corridors, although the visibility of the gen-tie lines would be limited to the crossing points and their approaches. The period of time that motorists would be within view of the gen-tie lines would be brief. In all instances, motorists would briefly notice an incremental addition to an existing linear structural element in the setting, which would not represent a substantial change to the visual character and quality of the setting. Therefore, the visual impact to the public from the gen-tie lines along other roadways in the area would be *less than significant*.

Visual Effects from Residential Vantage Points

WSP-North to Gates Gen-Tie. This gen-tie corridor commences in the northern portion of the Westlands Solar Park and extends southwesterly for a distance of 11.5 miles to the Gates Substation. This Gen-Tie corridor runs parallel and adjacent to the existing 230-kV Henrietta to Gates transmission line. There are 10 dwellings located within one mile of this corridor, the nearest of which are over 1,500 feet from the gen-tie corridor. Given that the setting of these dwellings includes the existing transmission corridor, the addition of a second parallel transmission line over ¼ mile from the nearest affected dwelling would not represent a substantial change to the visual character or quality of the setting of these residences. Therefore, the visual impact to residences in proximity to the WSP-North to Gates Gen-Tie line would be *less than significant*.

WSP-South to Gates Gen-Tie. As discussed above, this gen-tie line would run parallel and adjacent to the north side Nevada/Jayne Avenues for a distance of 11.5 miles from the Westlands Solar Park to the Gates Substation. Along this corridor there are two groups of existing dwellings along the south side of the roadway. These include 2 dwellings at the Stone Land Company Ranch discussed previously, and a row of 8 dwellings located on the south side of Jayne Avenue approximately 1.3 miles east of SR-269, which are discussed in turn below.

The dwellings at the Stone Land Company Ranch are set back 180 feet from the transmission corridor at its nearest point, and are screened from the roadway by a dense stand of landscaping trees throughout the front setback area of the ranch property. Since span lengths between transmission towers can range from about 800 feet to 1,400 feet, there is substantial flexibility in the siting of tower locations, which allows for minimization of impacts including visual effects. It is also most likely that steel monopoles would be utilized along the length of this gen-tie line. It is assumed that tower locations in the vicinity of the Stone Land Company Ranch will be spaced the maximum feasible distances from the existing dwellings, i.e., at least 600 feet from each dwelling, and that no towers will be placed directly opposite the dwellings. In addition, the existing frontage landscaping at the ranch will screen the overhead conductors between the towers. With the distance separation from the towers, and the screening of the conductors, and the likely utilization of steel monopoles, the transmission line would not result in a substantial change to the visual character or quality of the setting of these residences.

The row of 8 dwellings in the eastern portion of this gen-tie corridor are set back approximately 125 feet from the transmission corridor at its nearest point. Many of these residences have mature landscape trees in the front yards which provide some visual screening from the roadway. The row of dwellings extends for a distance of 900 feet along the south side of Jayne Avenue. It is assumed that the transmission towers will be placed the maximum feasible distance apart (i.e., 1,400 feet) so that towers can be placed at least 300 feet away (diagonally across Jayne Avenue) from both ends of the row of dwellings, and that no towers will be placed directly opposite any of the dwellings. As mentioned is likely that steel monopoles would be utilized along the length of this gen-tie line. In addition, the existing landscape trees in most of the front yards will partially screen the overhead conductors between the towers. With the distance separation from the towers and the partial screening of the conductors, and the likely utilization of steel monopoles, the transmission line would not result in a substantial change to the visual character or quality of the setting of these residences.

In summary, although the Nevada-Jane gen-tie-line would be in proximity to 10 existing dwellings, the visual effects would be minimized by providing maximum distance separation between the dwellings and the transmission towers, and by the visual screening provided by the existing landscaping along the frontages of the affected dwellings, as well as the planned utilization of narrow profile steel monopoles along this gen-tie route. Therefore, the southern tie line would not represent a substantial change to the visual character or quality of the setting of these residences. As such, the visual impact to residences in proximity to the WSP-South to Gates Gen-Tie line would be *less than significant*.

Summary and Conclusion – Visual Impacts Resulting from WSP Gen-Tie Projects

As discussed above, about 50 percent of the WSP Gen-Tie Corridors run parallel and adjacent to existing transmission lines (i.e., WSP-North to Gates Gen-Tie). The incremental visual changes resulting from the addition of the planned transmission lines to similar linear structural elements that exist in the setting would not substantially degrade the existing visual character or quality of the corridors or their surroundings.

In the 50 percent of corridor length where there are no existing parallel transmission lines, the visual effect of the planned gen-tie line would be reduced by screening from existing landscape trees and strategic placement of transmission towers (i.e., WSP-South to Gates Gen-Tie), and utilization or narrow profile monopoles. Thus the WSP gen-tie lines would not substantially degrade the existing visual character or quality of the corridors or their surroundings.

In conclusion, the visual impacts resulting from the WSP Gen-Tie projects would be *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

Impact AES-4. Light and Glare

***Westlands Solar Park*. The WSP solar development would introduce new sources of light and low level glare to the plan area; however, this would not represent a substantial new source of light and glare and would not adversely affect day or nighttime views in the area. (*Less-than-Significant Impact*)**

***WSP Gen-Tie Corridors*. The WSP Gen-Tie projects would not introduce new permanent sources of light or glare to their settings; and the night lighting that may be employed at work sites and staging areas would temporary and designed to be non-obtrusive. (*Less-than-Significant Impact*)**

This impact analysis addresses significance criterion 'd' above.

Westlands Solar Park

Lighting

Under existing conditions, the northern portion of the plan area is subject to night lighting from recently completed solar generating facilities and substation located at the corner of Avenal Cutoff Road and 25th Avenue, as well as from security lighting at the agricultural processing plant and the Henrietta substation/power plant complex to the north along 25th Avenue. Another source of night lighting is headlights from vehicles traveling on Avenal Cutoff Road and other roads in the vicinity.

The WSP solar facilities will introduce new sources of light to the area, although permanent exterior lighting will be mainly located at the site entrances, the operations yards, and the substation/switching stations. Lighting within the solar fields will be confined to the inverter/transformer pads, which will be activated only when needed by switch or motion sensors. There will be no permanent lighting within the solar fields, along any internal access driveways, or around the perimeters of the SGFs. Permanent lighting would be no brighter than required to meet safety and security requirements, and would be directed inward and downward to avoid direct illumination of adjacent properties and public rights-of-way. Mobile lighting would be employed within the solar fields for maintenance or equipment repair and replacement, and would be directed away from external boundaries.

During the construction phase for each solar facility, the construction staging areas would have security lighting. Temporary night lighting would be needed if and when construction activity extends into the nighttime hours. As with mobile lighting during facility operations, the temporary lighting would provide the minimum illumination needed and would be directed away from facility boundaries.

Potentially sensitive receptors to unwanted illumination from the project primarily include the existing residences in the vicinity and travelers on public roadways within and near the plan area. The nearest residences are at the Shannon Ranch complex located at the southwest corner of Avenal Cutoff Road and Lincoln/Gale Avenue, and at the Stone Land Company Ranch on Nevada Avenue east of Avenal Cutoff Road. Under current conditions, both ranch complexes employ night lighting for security and operational visibility. Both ranches include dense landscaping along their frontages which would provide screening from any light sources at the nearby solar facilities. However, it is not anticipated that any solar facilities with permanent lighting, such as operations yards or substations, or temporary facilities such as construction staging areas, would be located in the vicinity of either the Shannon Ranch complex or the Stone Land Company Ranch.

Travelers along the roadways traversing the plan area would notice the increased light sources associated with WSP solar development. Currently, the nighttime conditions throughout the majority of the plan area are essentially dark with isolated light sources associated with the ranch complexes, the existing solar facilities and substation at the intersection Avenal Cutoff Road and 25th Avenue, and the Henrietta substation and peaker plant to the north along 25th Avenue. The main source of night lighting for motorists is from headlights of oncoming vehicles. Within WSP, the few areas of permanent lighting would illuminate relatively small areas distributed throughout the plan area. Since the solar fields would not be illuminated, much of the plan area would remain in darkness.

In summary, the WSP solar projects would introduce new sources of permanent and temporary nighttime lighting to the plan area, although the vast majority of the plan area would be occupied by solar fields which would not be illuminated. The few residential receptors adjacent to the project would be subject to construction lighting, and occasional mobile lighting for nighttime maintenance and repair, but these light sources would be temporary, with light sources directed inward away from external boundaries, with substantial screening from indirect lighting provided by existing landscaping at the receptor sites. Travelers on public roadways traversing the plan area would notice an increase in permanent night lighting at the substations and operations yards, but the overall dark rural quality of the plan area would be largely maintained. Therefore, the lighting impacts resulting from the project would be *less than significant*.

Glare

Glare is an intense light effect resulting primarily from the reflection of sunlight off reflective surfaces when the angle of the sun to the surface is such that sunlight is reflected toward the receiver, causing potential discomfort or distraction of the receiver, or potential impairment of vision under extreme conditions. The main source of potential glare within the plan area would be from solar panels.

All of the solar panels installed within the plan area will be composed of photovoltaic cells. Solar PV employs glass panels that are designed to maximize absorption and minimize reflection in order to increase electrical production efficiency. Untreated silicon reflects about one-third of incoming sunlight. To limit reflection, solar PV panels are constructed of dark, light-absorbing materials, and are given an anti-reflective coating or textured surface. With the addition of the anti-reflective coating or treatment, the

reflectivity can be reduced to less than 4 percent of incoming sunlight (EE Times 2012). In comparison, the reflectivity of standard glass is over 20 percent, or about double that of uncoated solar panels. By contrast, concentrating solar thermal systems, which employ arrays of highly polished mirrors to refocus the radiation on a receiving tube or tower, reflect about 90 percent of the incoming sunlight (FAA 2010, p. 37).

In addition, PV solar systems are designed to maximize absorption of sunlight by keeping the panel surfaces oriented directly to the sun as much as possible. When the sun is high in the sky, sunlight is reflected skyward. However, when the sun is low in the sky (i.e., at dawn or dusk), the angle of reflectance increases, thereby increasing the potential for reflection at or near ground level. The potential for ground-level reflection is greatest with fixed-tilt solar arrays. When the sun is very low in the sky at sunrise and sunset (i.e., in the east or west), there is a potential for sunlight to be reflected obliquely from the east-west oriented panels at a similarly low angle to observers at ground level. The potential for ground-level reflection is substantially reduced in tracking systems, such as those planned for the WSP solar projects, which allow panels to follow the sun across the sky from east to west. Since tracking systems minimize the angle of incident sunlight at the panel surface, the angle of reflectance is also smaller, thus tending to direct reflected sunlight skyward even when the sun is low in the sky.

Since solar panels are designed specifically to maximize absorption of sunlight and minimize loss of incident sunlight through reflection, the potential for glare is also greatly reduced even during occasional periods when sunlight from module surfaces may be reflected to ground-level receptors. Under such conditions, the modules may produce a dull reflection of low-intensity light, but would not result in intense glare that would adversely affect views in the area or cause discomfort to receptors.

Potential Glare Effects at Existing Residences near WSP

There are two groups of dwellings adjacent to the project site that could be subject to potential low-intensity glare from WSP solar facilities. These include the cluster of ranch dwellings in the Shannon Ranch complex at the southwest corner of Avenal Cutoff Road and Lincoln/Gale Avenue, and the two dwellings at the Stone Land Company Ranch located on the south side of Nevada Avenue, about 1.4 miles east of Avenal Cutoff Road. In both instances, the dwellings nearest to the WSP plan area have existing landscape trees and shrubs along their property frontage which would minimize the potential for glare effects at these locations. In summary, the low intensity of any reflected sunlight from WSP solar panels, combined with the screening effects of existing landscaping along the frontages of existing ranch dwellings, would minimize the potential for adverse glare effects at these existing residential locations. Therefore, the potential glare impacts upon adjacent and near-by residential receptors would be *less-than-significant*.

Potential Glare Effects on Motor Vehicle Operation

Automobiles passing along the WSP solar facilities could be subject to low-intensity reflected sunlight from nearby solar panels at certain times of day. As discussed above, the potential for glare would be greatest at sunrise and sunset when oblique reflections could be received at or near ground level (but this applies mainly to fix tilt systems which are not anticipated to be employed within WSP). However, due to the low level reflection from the solar panels and the short duration of driver exposure to any low-intensity reflected light, traffic passing through the WSP plan area would not be subject to significant visual impairment or a safety hazard due to potential glare. In summary, the potential for driver discomfort or hazard to automobile operation posed by low-intensity reflected light from WSP solar facilities would be *less than significant*.

In summary, the solar panels installed in the plan area would be specifically designed to minimize glint and glare, and the remaining potential for low-intensity reflected light would not have a significant adverse effect on views from potential ground level receptors or motorists in the area. (See Section *II. K. Hazards and Hazardous Materials* for discussion of potential glare hazard to aviation.) Therefore, the glint and glare impacts resulting from WSP solar facilities would be *less than significant*.

In conclusion, the potential lighting and glare impacts associated with the WSP solar development would be *less than significant*.

WSP Gen-Tie Corridors

Lighting

Construction of the planned gen-tie facilities is expected to occur during daylight hours. However, in the event night construction may occasionally be required, temporary lighting would be required for security and safety. Night lighting may also be required for security at staging areas. However, it anticipated that any such lighting would be directed inward toward the work areas and that direct lighting beyond the work areas would be avoided. Night lighting at any given work site would be temporary since each tower would be completed in a matter of days, and works sites for conductor stringing would continuously shift along the gen-tie routes. Therefore, the potential lighting impacts due to gen-tie line construction would be *less than significant*.

Once completed, the gen-tie lines would not include lighting, so no new sources of light would occur. Therefore, the potential lighting impacts from the operation of the gen-tie lines would be *less than significant*.

Glare

The transmission towers, conductors, and insulators could have potentially reflective surfaces that could cause glare. However, it is expected that the materials selected for the transmission projects would be non-reflective and non-refractive, or would be treated with non-reflective coatings. Therefore, the potential glare impacts from the WSP Gen-Tie projects would be *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

Cumulative Impacts

Impact AES-5. Cumulative Aesthetic Impacts

***Westlands Solar Park*. The WSP solar projects and the other cumulative projects would result in visual changes to their settings; however, these visual changes would not represent cumulatively significant visual impacts. (*Less-than-Significant Cumulative Impact*)**

***WSP Gen-Tie Corridors*. The WSP gen-tie projects and the other cumulative projects would result in visual changes to their settings; however, these visual changes would not represent cumulatively significant visual impacts. (*Less-than-Significant Cumulative Impact*)**

Geographic Scope of Analysis of Cumulative Aesthetic Impacts

Aesthetic impacts tend to be localized and generally extend a short distance beyond project boundaries. Two or more cumulative projects would have the potential to result in visual impacts if they are located in the same field of view of a given observer. Given the essentially flat terrain of the WSP vicinity, the distance that objects would be clearly visible by observers situated within view of a project would be less than one mile. Thus, for purposes of this EIR, the geographic scope of the cumulative analysis of aesthetic impacts is considered to extend approximately one mile beyond the boundaries of the WSP plan area and the WSP gen-tie corridors.

Westlands Solar Park

Near Term

Under near-term conditions, there are 4 pending, approved, and completed projects (or groups of projects) within a one-mile radius of the WSP's outside boundaries. All 4 of these projects comprise solar PV developments. (Note: The Westside Solar project and Westlands Aquamarine solar project, shown in Figure PD-9, are located within the WSP plan area. However, since the impacts associated with these projects are addressed in the WSP impact analysis, they are not included again in the list of cumulative projects below.) These solar projects are listed below and described in Section *2.5. Completed, Approved and Pending Projects/ Introduction to Cumulative Impact Analysis*. Their locations are shown in Figure PD-9.

- Mustang/Orion/Kent South
- Kettleman
- American Kings
- Mustang 2

It is noted that the Mustang/Orion/Kent South and Kettleman solar projects have been completed and are operating. The American Kings and Mustang 2 solar projects are pending approval as of this writing.

The WSP plan area and the other cumulative project sites have relatively low visual quality and no significant scenic resources in their vicinities. Given the small number of residences in the area, and the few roadways that pass through the area, the visual access of the sites to the public is also low. Thus the overall visual sensitivity of the WSP plan area and other cumulative project sites is considered to be low. While the solar generating facilities would represent a visual change to the predominantly agricultural character of their settings, the low profile of the solar facilities would not be out of scale with their rural surroundings. Given also the low visual sensitivity of the cumulative project sites, the visual impacts resulting from each individual solar project would be less than significant.

Visual impacts can occur at residential receptor sites or in areas visible to the traveling public along area roadways. As mentioned, the residential receptors near the WSP plan area include the Shannon Ranch complex and the Stone Land Company Ranch. The visual impacts of WSP solar development upon these residences would be less than significant, and a significant cumulative impact would occur only if visual impacts from the other cumulative projects combined with the less-than-significant impacts of WSP solar development to produce a significant visual impact. However, none of the other cumulative projects are in proximity to either the Shannon Ranch or the Stone Land Company Ranch, with the nearest cumulative projects located at least 3 miles from the Shannon Ranch and 5 miles from the Stone Land Company Ranch. Since none of the other cumulative projects would have a visual effect on these residential receptors, the near-term cumulative visual impact upon the nearest residences would be *less than significant*.

To motorists traveling along Avenal Cutoff Road, the WSP solar development and three of the other cumulative projects would be visible along the roadside. Given the low visual sensitivity of the setting and the low profile of solar PV development, the visual impact of the WSP solar development would be less than significant, as discussed under Impact AES-3 above. The three cumulative projects that would also have frontage on Avenal Cutoff Road – Kent South, American Kings, and Mustang 2 – would increase the distance along which motorists on Avenal Cutoff Road would view solar fields along the roadside. The cumulative visual effect of four projects along Avenal Cutoff Road would be that of a noticeable change but would not substantially degrade the existing visual character or quality of the setting. Therefore, the near-term cumulative visual impact to the traveling public would be *less than significant*.

As discussed under Impact AES-4 above, the WSP solar facilities would require minimal night lighting, and this is also expected to be the case for the cumulative solar projects. In addition, solar PV facilities produce minimal glare. The lighting and glare impacts from WSP solar development and from each of the other solar projects would be less than significant. These less-than-significant lighting and glare effects would not combine to produce a cumulatively substantial lighting and glare effect. Therefore, the near-term cumulative lighting and glare impacts would be *less than significant*.

In summary, near-term cumulative visual impacts and lighting and glare impacts associated with the WSP solar development would be *less than significant*.

Far Term

To evaluate far-term conditions, the cumulative analysis of visual impacts considers the full buildout of land uses in the vicinity of the WSP plan area as shown on the 2035 Kings County General Plan and the Fresno County General Plan (which covers lands immediately to the west of WSP). The 'Kings County Land

Use Map' of the Land Use Element shows that Kings County lands near the WSP plan area are designated as either 'General Agriculture 40 ac.' or 'Exclusive Agriculture 40 ac.' Similarly, the Fresno County General Plan shows the lands near the WSP plan area are designated 'Agriculture.' Thus it is reasonable to assume that agricultural production will remain the dominant land use in surrounding lands for the life of the General Plans.

It is important to note that, as with the lands of the WSP plan area, the agricultural designations of the 2035 Kings County General Plan allow the installation of utility-scale PV solar generating facilities (KC 2010). Thus it is possible that additional solar development projects could be proposed in the WSP vicinity within the remaining 20-year planning horizon of the General Plan. Since the adjacent lands to the west of the WSP plan area are located within Fresno County, the corresponding General Plan designations for Fresno County lands would guide permitted uses on adjacent lands to the west. While the Fresno County General Plan does not specifically allow PV solar development on agriculturally-designated lands, the County has initiated a process for considering solar PV development on agriculturally-designated lands, and has approved a number of solar PV projects under this process (Fresno County 2011). Few solar projects have been proposed or approved by Fresno County in the nearby areas to date, and none have been proposed within 5 miles of the WSP plan area in Fresno County. However, Fresno County has approved a number of solar projects on other agricultural lands in the western portion of the County, so it is reasonable to assume that the County would consider proposals for PV solar development on agricultural lands near the WSP plan area. Thus it is anticipated that any development on nearby lands would consist predominantly, if not exclusively, of solar PV projects.

As discussed in Section *3.1.1. Environmental Setting*, the WSP and surrounding lands have low visual quality given the flat and featureless character of the agricultural lands in this area. The presence of very few residences in the area and the relatively lightly traveled roadways in the area indicate that the area has a low level of visual access. Thus the WSP plan area and surrounding lands have low visual sensitivity. Assuming that most, if not all, substantial future development in the area would consist of low profile and non-obtrusive solar PV projects, the visual impacts of individual future solar projects in the area would be less than significant. In the event that any future solar projects in the area are located in proximity to visual receptors that are common to such projects and WSP solar development, the combined visual effect would not substantially degrade the visual character and quality of the setting. Therefore, the far-term cumulative visual impacts associated with WSP solar development would be *less than significant*.

WSP Gen-Tie Corridors

Depending on the setting, transmission tower lines can be visible for several miles, but their visual prominence is substantially diminished within one mile. Therefore, the geographic scope of analysis for cumulative visual impacts related to the planned transmission corridors is set at one mile from the corridors. Thus cumulative projects located within one mile of the planned transmission corridors are considered in this analysis

Near Term

Under near-term conditions, there are four pending, approved, and completed solar projects and two transmission projects within one mile the WSP Gen-Tie Corridors. These projects are listed below and

shown in Figure PD-10, and described in Section *2.5. Completed, Approved, and Pending Projects/Introduction to Cumulative Impact Analysis*.

- Westlands Solar Farm
- PGE Gates Solar
- PGE Huron Solar
- EC&R Solar Project
- Westside Transmission Project (Gates to Dos Amigos/Los Banos Substation)
- Central Valley Power Connect (CVPC)(Gates to Gregg Transmission Project)

It is noted that the first three solar projects listed have been completed and are operational. It is also noted that the CVPC transmission project has been placed on hold and may not move forward. However, for purposes of this analysis, it is considered an active pending project and thus is included in this cumulative analysis.

As discussed under Impact AES-3, the visual impacts resulting from the WSP Gen-Tie projects would be less than significant. As discussed, the overall visual sensitivity of the corridors area is moderate. The planned gen-tie lines would run parallel and adjacent to existing transmission lines for about 50 percent their overall length (i.e., WSP-North to Gates Gen-Tie), and the other 50 percent would run alongside the Nevada/Jayne Avenue roadway corridor. Thus the new gen-tie lines would represent an incremental addition to a similar structural corridor along the northern gen-tie corridor, and would similarly represent an incremental addition to an existing linear human-made feature along the southern gen-tie corridor. Since neither gen-tie line would introduce a new structural elements into a visually sensitive area that is absent of linear structural elements, the overall visual impact of the WSP gen-tie projects would be less than significant.

Among the other cumulative projects, a portion of the Central Valley Power Connect (Gates to Gregg) Transmission Project would run parallel and adjacent to the northern WSP gen-tie corridor. Since there are existing transmission lines in place along these corridors, the cumulative transmission projects, including the affected northern WSP gen-tie, would not substantially degrade the visual character or quality of the setting. At the western end of the gen-tie corridors near the Gates Substation, the completed PG&E Huron and PG&E Gates solar projects and the proposed EC&R solar project would be located a short distance from the WSP gen-tie corridors and the Central Valley Power Connect and Westside transmission projects. As discussed above under Westlands Solar Park, solar projects are generally visual unobtrusive and would not result in a substantial visual impact in the valley setting. Moreover, the area where the cumulative solar and transmission projects would be concentrated is visually dominated by the large Gates Substation and several existing transmission lines that converge on the substation in this area. As such, the visual setting is already substantially degraded by these large-scale electrical facilities. Given the low visual quality of the area where the cumulative projects would be concentrated, and the relatively small number of residential or traveling public receivers, the visual sensitivity of this area is low. The addition of the cumulative solar and transmission projects to this already degraded visual setting would not substantially degrade the visual character or quality of the setting. Therefore, the near-term cumulative visual impacts associated with the WSP gen-tie projects would be *less than significant*.

As discussed under Impact AES-4, the WSP gen-tie projects would not include lighting or reflective surfaces. While night lighting may sometimes be needed for nighttime construction, or for security at staging areas, the effects would be minimal and temporary. The lighting and glare effects of the cumulative solar and transmission projects are also expected to be minimal. Therefore, the near-term cumulative lighting and glare impacts associated with the WSP gen-tie projects would be *less than significant*.

Far Term

Under far-term conditions, it is assumed that all cumulative projects considered in the near-term analysis will be completed. The far-term cumulative analysis of visual impacts assumes the full buildout of land uses adjacent to the WSP gen-tie corridors as shown on the General Plans of Kings and Fresno counties. All adjacent lands are designated for agricultural uses in the county general plans. While both counties allow solar PV projects on agriculturally-designated lands, it is not foreseeable which lands, if any, adjacent to the gen-tie corridors will be proposed for solar PV development in the far term. Also, additional transmission facilities or other public utility uses could be planned for adjacent lands, but this eventuality is also unforeseeable at this time. However, this far-term analysis assumes that some solar PV development and additional transmission projects would be constructed in the project vicinity in the far term. It is not anticipated that other non-agricultural development would occur in the vicinity of the WSP transmission corridors under far-term conditions.

Given the relatively low visual mass and profile of the potential cumulative development anticipated in the gen-tie corridors area in the far term, i.e., transmission and solar projects, the combination of these projects and the WSP gen-tie projects would not substantially degrade the visual character or quality of the setting. Therefore, the far-term cumulative visual impacts associated with the WSP gen-tie projects are expected to be *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

REFERENCES/BIBLIOGRAPHY – AESTHETICS

Caltrans 2011 — California Department of Transportation (Caltrans). 2011. *California Scenic Highway Mapping System.* September. http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/index.htm

CPUC 1995 — California Public Utilities Commission (CPUC). 1995. *General Order No. 131-D. Rules relating to the Planning and Construction of Electric Generation,*

Transmission/Power/Distribution Line Facilities and Substations Located in California. Decision 94-06-014, adopted June 8, 1994, as modified August 11, 1995. http://162.15.7.24/PUBLISHED/Graphics/589.PDF

EE Times 2012 — EE Times. 2012. "Black Solar Cells Have Lowest Reflectance for Silicon Solar Cells." May 29, 2012. http://www.eetimes.com/document.asp?doc_id=1261835

FAA 2010 — Federal Aviation Administration. 2010. *Technical Guidance for Evaluating Selected Solar Technologies on Airports*. November. http://www.faa.gov/airports/environmental/policy_guidance/media/airport-solar-guide.pdf

Fresno County 2000b — County of Fresno. 2000. *Fresno County 2000 General Plan –Policy Document*. October. http://www2.co.fresno.ca.us/4510/4360/General_Plan/GP_Final_policy_doc/Table_of_Contents_rj_blue.pdf

Kings County 2009c — Kings County. 2009. *Draft EIR – 2035 Kings County General Plan Update*. June. http://www.countyofkings.com/planning/2035%20draft%20general%20plan/DEIR%20Compiled%20for%20viewing.pdf

Kings County 2010 — Kings County. 2010. 2035 Kings County General Plan. Adopted January 26, 2010. http://www.countyofkings.com/departments/community-development-agency/information/2035-general-plan

Kings County 2016a — Kings County. 2016. *Kings County Development Code. Kings County Code of Ordinances, Appendix A - Ordinance No. 668.12*. Dated January 26, 2016; Effective February 26, 2016. http://www.countyofkings.com/home/showdocument?id=12535

Sunpower 2011 — Sunpower Corporation. 2011. *PV Systems: Low Levels of Glare and Reflectances vs. Surrounding Environment*. https://us.sunpower.com/sites/sunpower/files/media-library/white-papers/wp-pv-systems-low-levels-glare-reflectance-vs-surrounding-environment.pdf

This page intentionally left blank

3.2. AGRICULTURAL RESOURCES

3.2.1. ENVIRONMENTAL SETTING

Westlands Solar Park

State and Regional Context

According to the Department of Conservation's (DOC) Farmland Mapping and Monitoring Program (FMMP), in 2014, the State of California contained 31.4 million acres of agricultural land, of which 5.1 million acres were Prime Farmland (DOC 2015d). The total value of agricultural products sold in California in 2012 was $42.6 billion, which ranked highest in the nation and represented 10.7 percent of the U.S. total (USDA 2014).

In 2014, Kings County had a total 821,397 acres of farmland, representing about 3 percent of the State total. Kings County's farmland includes approximately 112,225 acres of Prime Farmland, which comprise 13.5 percent of the County's total farmland, and approximately 2.5 percent of the State's Prime Farmland (DOC 2015e).

The value of agricultural products in Kings County in 2014 was $2.47 billion, which ranked 8th in California, and represented about 6 percent of the State total (Kings County 2015).

Historical Context

The WSP plan area lies within the service area of the Westlands Water District (WWD), which was formed in 1952 to serve agricultural water users on the west side of the San Joaquin Valley. The District is generally bounded on the east by the San Joaquin River, Fresno Slough, and the Kings River, on the west by the foot of the Diablo Range along I-5, and extends from Mendota in the north to Kettleman City in the south (see Figure PD-1 in Chapter 2).

In 1960, the U.S. Congress authorized construction of the San Luis Unit (SLU) of the Central Valley Project (CVP), and in 1968 deliveries of CVP water began upon completion of the San Luis Canal by the U.S. Bureau of Reclamation (USBR). The WWD service area includes 610,000 acres which comprise approximately 87 percent of the San Luis Unit service area. Under its current contract with the USBR, the Westlands Water District is entitled to receive 1.197 million acre-feet of surface water delivery during years when 100 percent of this "Contract" water is available.

As described in detail below, the soils in the eastern portions of Westlands, including the entire WSP plan area, contain relatively high levels of naturally-occurring salts and trace elements such as selenium and boron. In addition, the presence of clay layers near the ground surface, along with the high clay content of the soils, results in "perched groundwater" conditions and seasonal soil saturation near the root zone of crops. The high groundwater conditions and potential for cumulative soil salinization were recognized in the original Congressional authorization for the San Luis Unit, which mandated the construction of the San Luis Drain for the exclusive purpose of transporting subsurface drainage from the southern end of

the San Joaquin River drainage basin to Suisun Bay. An approximately 82-mile segment of the drainage canal, originating near Five Points and extending northwest to the Kesterson Reservoir near Los Banos, was completed by 1975 when construction was stopped due to lack of government funding. Originally intended as regulating reservoir for drainage flows to the Delta, Kesterson became a *de facto* drainage sump where ongoing evaporation of incoming drainage flows resulted in increasingly toxic concentrations of selenium which in turn caused severe impacts to waterfowl nesting at the reservoir, including mortality, reproductive failure, and birth deformities. Kesterson was closed to agricultural drainage water in 1986 and Westlands has been without drainage service since that time (USBR 2006).

In 2000, a federal Court Order confirmed that USBR is responsible for providing drainage service to lands within the San Luis Unit. Subsequently, the USBR commenced work on the San Luis Drain Facility Re-Evaluation EIS (SLDFR EIS), the purpose of which was to identify and evaluate alternative means of managing the regional shallow groundwater table within the 298,000-acre "drainage-impaired" area within Westlands by providing drainage service and/or reducing contributions of water to the shallow water table through land retirement. The drainage service would involve the construction of complex and costly systems for conveyance, treatment, and reuse of treated drainage water.

At the conclusion of the project review and EIS process, the USBR selected the alternative that would involve the retirement of 194,000 acres from irrigation. The remaining lands within the drainage-impaired area would stay in production and would be provided with drainage service in order to maintain the water and salt balance for sustainable agriculture within those areas (USBR 2006).

A project feasibility report prepared after approval of the EIS Record of Decision (ROD) estimated that the total construction cost for installation of the drainage and treatment facilities in the In-Valley/Water Needs Land Retirement Alternative would be $2.7 billion in 2006 dollars (USBR 2007).

On September 15, 2015, the U.S. Department of Justice and Westlands Water District approved a settlement agreement regarding the drainage issue. Under the terms of the settlement, the District is to assume responsibility for managing drainage within Westlands, and CVP surface water deliveries to Westlands will be capped at 895,000 acre-feet per year, and the District will permanently retire a minimum of 100,000 acres from irrigated agriculture, among other things. The retired lands are to be used for renewable energy projects, upland habitat restoration, and other uses (USBR 2015).

WSP Site Conditions

Agricultural Setting

The 20,938-acre WSP plan area consists almost entirely of agricultural fields and supporting features such as irrigation canals and piping, drainage ditches, farm lanes, agricultural wells, and electric power lines. The exception is the northeast corner of the plan area, at the southwest corner of Avenal Cutoff Road and 25th Avenue, where the 2 MW Westside Solar Project was recently constructed on 18 acres, and is currently operational.

A variety of field crops are grown within the WSP plan area, including cotton, tomatoes, wheat, corn, and alfalfa. The more fertile lands in the extreme western portion of the WSP plan area, near Avenal Cutoff Road and Nevada Avenue, support fruit and nut crops such as grapes, pistachios, and almonds. In the eastern portion of the plan area, where approximately 4,960 acres have been retired from irrigated

agriculture, the land is dry farmed for winter wheat with rotation to fallowing during the summer months.

Geomorphology and Soils

The parent materials of the WSP soils originate from marine sediments of the Coast Ranges formed millions of years ago when these lands were on the seabed. These formations, which primarily consist of fine-grained shales, were uplifted over time, and were then subject to erosional forces which transported these sediments downstream to the west side of the valley where they formed large alluvial fans. The sedimentary formations of the Coast Ranges retained high concentrations of salts resulting from evaporative processes over millions of years. Since these salts are soluble, they were dissolved by rainfall and mobilized in drainage courses that carried the salts downstream to be deposited with the formation of the alluvial fans (Presser 1987, p. 807). These salts include associated trace elements such as selenium (Se), a semi-metallic element which is essential to human health in very small amounts but hazardous to health in concentrations that exceed 30 parts per billion (ppb) (OEHHA 2010).

The geomorphologic processes resulted in the formation of two distinct landform types in the western San Joaquin Valley, including: 1) the upper and middle alluvial fans and fan terrace areas in the higher westerly elevations; and 2) the lower alluvial fans or fan skirts, interfan areas, and basin floors located in the lower lying eastern areas. The WSP is located on the lower alluvial fan area which is underlain by clay layers at depths of 10 to 40 feet that impede the downward movement of water (Presser 1987, p. 807). These lands are also characterized by fine-textured clayey soils with low permeability and slow groundwater movement. The upper clay layers combined with the slow draining soils result in a high or "perched" groundwater table that is commonly within 10 feet of the ground surface throughout most of the WSP plan area, and within 5 feet over substantial areas, especially in normal or wet rainfall years.

In the higher alluvial fan areas to the west of WSP, the soils consist of coarse-textured sediments that are well drained and have low salt concentrations. These lands have naturally high fertility and are not subject to the shallow groundwater conditions that prevail in the lower alluvial fan deposits to the east (WWD 2015b). The water table in this western area is typically located several hundred feet below the ground surface (USBR 2006, p. 6-11).

NRCS Soil Survey

The most recent comprehensive soil survey of Kings County was completed in 1985 by the National Resources Conservation Service (NRCS), formerly the Soil Conservation Service (SCS). According to the Kings County Soil Survey, the WSP site includes 10 different soil types, as shown in Figure AG-1. These soils are listed in Table AG-1 along with their NRSC land capability classification, Story Index ratings, and Important Farmland Designations under the Department of Conservation Farmland Monitoring and Mapping Program (FMMP), along with brief notes on soil limitations as noted by NRCS. These soils are dominated by Lethent clay loam which covers 66 percent of the WSP plan area. The Lethent soils are saline-alkali and therefore are best suited to salt- and alkali-tolerant, drought resistant crops. These soils also are limited by very slow permeability, and have a high shrink-swell potential, and are highly corrosive to concrete and steel.

TABLE AG-1

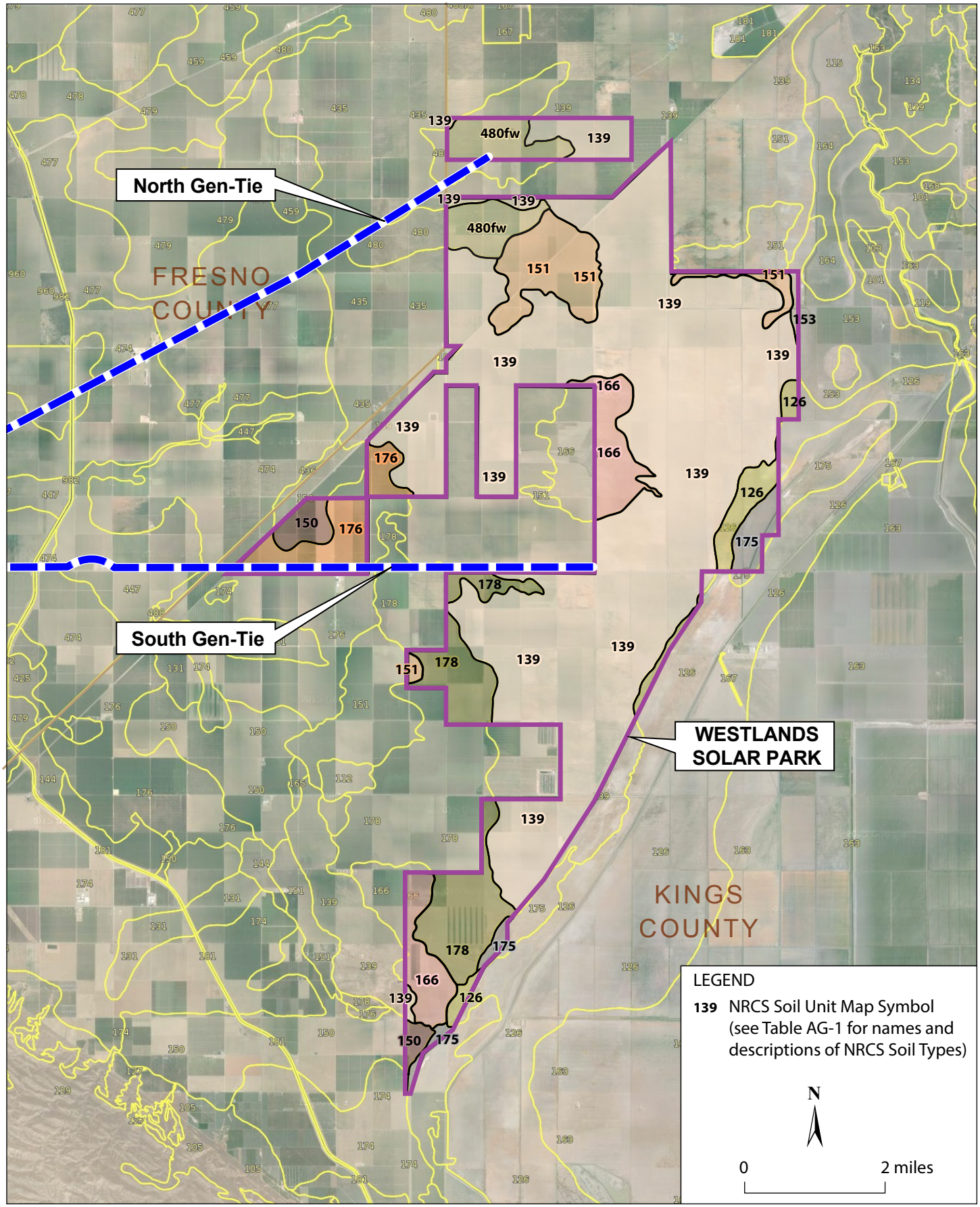
AGRICULTURAL CAPABILITY OF WSP SOILS

Soil Unit	NRCS Map Unit Symbol	Acres in WSP (Approx.)	NRCS Land Capability		Storie Index Rating[1]	Important Farmlands Designation	NRCS Soil Limitations
			Irrigated	Non-Irrigated			
Calfax clay loam, saline-sodic	480fw	820	IIs-6	VIIs	58	Farmland of Statewide Importance	S = soil limitations within the rooting zone such as salinity. Saline = soil contains soluble salts which impair productivity for plants. Sodic/Alkali = soil contains sufficient sodium to interfere with the growth of most crop plants. Groundwater – Perched.
Houser clay	126	640	IIIw-6	VIIw	14	Farmland of Statewide Importance/ Grazing Land[2]	W = excess water such as high water table
Lethent clay loam	139	13,888	IIIs-6	VIIs	41	F. of Statewide Importance/ Grazing Land	S = soil limitations within the rooting zone such as salinity. Groundwater – Perched.
Panoche loam	150	320	I	VIIc	100	Prime Farmland	C = climatic limitation where climate (temperature or lack of soil moisture) is the only major hazard or limitation.
Panoche clay loam	151	1,070	IIs-6	VIIs	60	Grazing Land[2]	S = soil limitations within the rooting zone such as salinity.
Pitco clay	153	280	IIIw-6	VIIw	19	Grazing Land[2]	W = excess water such as high water table. Groundwater – perched.
Twisselman silty clay, saline-alkali	166	1,120	IIIs-6	VIIs	20	Farmland of Statewide Importance/ Grazing Land[2]	S = soil limitations within the rooting zone such as salinity. Saline = soil contains soluble salts which impair productivity for plants. Sodic/Alkali = sodium content interferes with the growth of most crop plants.
Westcamp loam	175	360	IIIw-6	VIIw	49	F. of Statewide Importance/ Grazing Land[2]	W = excess water such as high water table. Groundwater – Perched.
Westhaven loam	176	760	I	VIIc	95	Prime Farmland	C = climatic limitation where climate (temperature or lack of soil moisture) is the only major hazard or limitation.
Westhaven clay loam, saline-alkali	178	1,680	IIIs-4	VIIs	65	Farmland of Statewide Importance	S = soil limitations within the rooting zone such as salinity. Saline = soil contains soluble salts which impair productivity for plants. Sodic/Alkali = soil contains sufficient sodium to interfere with the growth of most crop plants.
Total Acres		**20,938**					

[1] Storie Index rating does not consider availability of water supply for irrigation.

[2] Mapped by FMMP as Grazing Land where land has not been irrigated for at least 4 years (see Figure AG-2).

Sources: NRCS 1986; CDOC 2017.



Sources: NRCS; UC Davis SoilWeb, 2016

Soils

Figure AG-1

This page intentionally left blank

Most of the other soil types of the WSP plan area are also subject to limitations such as high salinity, poor drainage, or both (NRCS 1986).

NRCS Land Capability Classification

Under the soils classification system of the NRCS, soils are classified according to eight broad 'Land Capability' classes, with Class I and II soils being the most fertile and well suited for cultivation. As shown in Table AG-1, several soil types are classified as Class I or II soils with irrigation, including Calfax clay loam, Panoche loam and clay loam, and Westhaven loam. The Class I and II soil types under irrigation cover approximately 3,210 acres, or 15 percent of the WSP plan area. The remaining 85 percent of the project soils are classified as Class III soils with irrigation, which the NRCS describes as having "severe limitations that reduce the choice of plants or require special conservation practices, or both." Without irrigation, all project soils are classified as Class VII soils which are described by the NRCS as having "very severe limitations that make them generally unsuited to cultivation and that restrict their use mainly to grazing, forestland, or wildlife." As mentioned, the predominant soil type within the WSP plan area is Lethent clay loam which occupies approximately 66 percent of the plan area. This soil type is classified as Class III (non-prime) with irrigation and Class VII without irrigation (NRCS 1986).

Storie Index Ratings

The second land capability system applied by NRCS, called the Storie Index, is specific to California. Soils with a Storie Index rating of 80 or greater are classified as Grade 1 or prime soils. Two soil types in the plan area have Storie Index ratings higher than 80, including Panoche loam which has a Storie Index rating of 100, and Westhaven loam has a rating of 95 with irrigation. Together these soil types cover 1,080 acres, or 5 percent of the plan area (NRCS 1986).

Groundwater Conditions

Mapping by the California Department of Water Resources (DWR) and WWD shows that shallow groundwater levels over the majority of the WSP plan area are typically between 5 and 10 feet below the ground surface, and that significant areas have groundwater less than 5 feet below the surface. The semi-annual groundwater mapping prepared by WWD shows some seasonal variation in near-surface groundwater levels, and also some fluctuation in response to drought conditions; however, the overall variation in the near-surface groundwater table elevation within the WSP site over the past 10 years has been 5 feet or less (DWR 2010a)(WWD 2006, 2015b).

The high clay content results in low permeability, and soil amendments such as gypsum are required to aid downward percolation of irrigation water. Intensive management is required to reduce the salinity and maintain soil productivity (NRCS 1986, p. 44). The WSP growers confirm that the naturally high salt content of the soil requires close management, and that the natural low fertility soils require substantial amendment with nitrogen and phosphorus to produce acceptable yields (Shannon 2011)(Esajian 2011).

Under irrigated agriculture, substantial amounts of soluble salts and selenium in the native soils are dissolved and are leached into the groundwater. As discussed, subsurface drainage is restricted due to the presence of the near-surface clay layers as well as the high clay content of the near-surface soils. With the application of irrigation water, the impedance of downward drainage by the slow draining soils and the near-surface clay layers result in rising groundwater levels. The salts and selenium in the near-

surface groundwater are transported upward toward the surface through capillary action, or wicking. When the near-surface water evaporates, the precipitated salts are left behind, resulting in increased salinity in the surface soils (USBR 2006, p. 13-2).

Elevated salt concentration in soil and groundwater tends to inhibit plant growth and reduce yields. Since plants are able to absorb only pure water, the higher the salt concentration, the less water is available to plants, even though the soil may appear wet. This is known as "physiological drought" and has the same effect as an actual drought in terms of starving plants of water needed for growth. There is wide variation in the ability of plants to tolerate saline water, with each plant or crop having different thresholds of salinity tolerance where crop yields begin to diminish rapidly (CSU 2011).

On the west side of the San Joaquin Valley, this problem arose as early as the late 1890s with the application of well water to field crops, and resulted in lands going out of production within a short period of years. The completion of the San Luis Unit of the USBR's Central Valley Project in the 1960s provided imported surface water for irrigation. While this vastly expanded the area that could be placed under irrigated agriculture on the valley's west side, it also added large quantities of water to the already shallow water table in the eastern areas of the San Luis Unit, including the WSP plan area. In addition, the imported surface water includes some salts, which further exacerbates the soil salinity imbalance. In addition, irrigation water pumped from wells screened in the lower aquifer contains increasing concentrations of salts that have leached down from the surface into the lower aquifer over the years. The rising concentration of salts and the rising water table can have the dual effect of water logging the root zone of planted crops and exceeding their salt tolerance. With advances in agronomic practices over the years, growers in the drainage-impaired areas have been able to apply advanced management techniques to increase irrigation efficiency and provide for calibrated leaching some salts from the near-surface groundwater. Nevertheless, substantial acreage within Westlands Water District (and within WSP itself) has been retired from agriculture because the groundwater drainage problem was too severe (USBR 2006, p. 13-2).

Sampling from perched groundwater (i.e., groundwater in the near-surface soils) conducted by USBR in the mid-2000s found that Total Dissolved Solids (TDS - a measure of groundwater salinity) within the WSP ranged from 1,500 to over 12,000 milligrams per liter (mg/L) (note: 1 mg/L = 1 part per million [ppm]). Over 80 percent of the WSP site indicated TDS levels in excess of 3,000 mg/L, and 40 percent of the site had TDS levels that exceed 6,000 mg/L (USBR 2006, p. 6-3). Few vegetable and fruit crops have salt tolerances in excess of 3,000 mg/L, and few grains can tolerate salt levels exceeding 6,000 mg/L (FAO n.d., p. 135). Subsequent mapping by the California Department of Water Resources (DWR) shows 2012 salinity levels in the near-surface soils to be in the same general range as shown in the 2006 mapping by USBR (DWR 2012). (It is noted that the median salt concentration in surface water delivered from the nearby segment in the California Aqueduct from March 2015 to March 2016 was approximately 350 mg/L [DWR 2016]. The recommended secondary maximum contaminant level (SMCL) set by the California Department of Public Health (CDPH) for TDS in drinking water is 500 mg/L, and the upper limit is 1,000 mg/L (SWRCB 2010a).) It is estimated that 453,000 tons of salt per year are imported to Westlands in irrigation water [Presser 2008, p. 6].) The highly saline soils of the WSP site have placed severe restrictions on crop selection, such that the predominant crops are cotton and salt tolerant grains such as wheat and barley (Shannon 2011).

USBR's sampling of the shallow groundwater for selenium indicated that concentrations within the WSP plan area range up to 50 ppb, with the highest concentrations occurring in the southern half of the plan area (USBR 2006, p. 6-5). The State of California Public Health Goal (PHG) for selenium in drinking water is 30 parts per billion (ppb)(OEHHA 2010)(Note: 1 ppb = 1 microgram per liter [µg/L]). The U.S. Environmental Protection Agency's (EPA) ambient water quality criterion for protection of aquatic life is 5 ppb selenium (USBR 2006, p. 5-4). Calcium, magnesium, boron, bicarbonates, and chlorides are all present in significant quantities (USBR 2006).

Irrigation Water Supply

Imported Surface Water Supply

Growers within the WSP plan area receive deliveries of federal Central Valley Project (CVP) surface water supplies which are provided through the Westlands Water District (WWD). The total volume of water required for the entire irrigable area of 568,000 acres within WWD is about 1.5 million acre-feet (WWD 2016). Westlands' annual water entitlement from the USBR's Central Valley Project is 1,197,000 acre-feet, or 303,000 acre-feet less than irrigation needs. Thus Westlands' surface water supply entitlement of CVP water is 20 percent short even when 100 percent of the Contract water is available. Some of the difference is made up by well water from the lower aquifer and water transfers (the latter averaging 150,000 acre-feet per year). Under the terms of the 2015 settlement agreement between WWD and DOJ, WWD's annual water deliveries will be capped at 895,000 acre-feet, as discussed above. Thus the annual shortfalls of water supply will be approximately 500,000 acre-feet per year, assuming full delivery of surface water, and annual transfers of 150,000 acre-feet per year.

The west side of the San Joaquin Valley was among the last areas in the Central Valley to receive imported water from the Delta. Since the San Luis Unit was constructed to deliver "surplus Delta water," the existing water users elsewhere in the State either had senior water rights or had a higher priority in the queue to receive Contract water from the federal CVP or the State Water Project. As such, the "south of Delta" contractors suffer disproportionately during drought conditions when water deliveries are curtailed. (It is estimated that under drought conditions, approximately 75 percent of the shortage is the result of actual hydrological drought conditions, and about 25 percent is due to "regulatory drought" factors such as legislatively and/or court-mandated flows for endangered aquatic species and habitat.) This is best illustrated by the recent multi-year drought when WWD receive no CVP water deliveries whatsoever in 2014 and 2015. Between 2006 and 2015, WWD has received its full 100 percent contract entitlement in only one year - 2006. In 8 of those 10 years, WWD received water allocations that were 50 percent or less than its Contract entitlement. The average annual water allocation received during that 10-year period was about 460,000 acre-feet, or 38.5 percent of the contract entitlement (WWD 2016). This represents 31 percent of the total irrigation water requirement (i.e., 1.5 million acre-feet) in the District. The curtailment of surface water deliveries is experienced equally by all of WWD's contractors, including the growers within the WSP plan area.

Groundwater Supply from Lower Aquifer

Given the chronic shortage of surface water supplies, growers within the WWD service area must augment surface water deliveries with pumped groundwater to meet crop irrigation needs. However, sustainable yield of the Westside Subbasin will likely be a lower extraction rate than the historical average. (Estimates of sustainable yield are currently being developed by WWD pursuant to the Sustainable Groundwater Management Act.) In the 30-year period since 1988, groundwater withdrawals within WWD have averaged 273,000 AF per year (WWD 2017). Under drought conditions, groundwater withdrawals can exceed the sustainable yield of the groundwater subbasin, which could result in progressive lowering of the lower aquifer's groundwater table. For example, during the drought years 2012-2016, the annual estimated volume of groundwater pumping averaged 586,000 AF per year (WWD 2017). This resulted in a drop of up to 400 feet in the groundwater table in the lower aquifer between 2011 and 2015 in some areas on the District (WWD 2015a).

Even in years when growers receive 100 percent of their contract entitlement, additional water must be pumped from wells screened in the lower aquifer to meet crop irrigation requirements. The application of the pumped groundwater and imported surface water to crops has resulted in large downward head gradients (i.e., downward pressure on percolating groundwater). As a result, some of the salts and selenium in the near surface soils are leaching deep into the alluvium and increasing the salt and selenium concentrations in the aquifer, which is used for drinking water as well as a source of irrigation water. Although the lower aquifers are hundreds of feet below the surface, the poor quality groundwater is moving downward in response to recharge by irrigation from above the water table and by removal of groundwater via wells screened in the lower aquifer. Sampling of water quality from wells screened in the lower aquifer by WSP landowners indicated that salt (TDS) concentrations in the water bearing zone ranged from 384 to 1280 mg/L (WSPL 2010). All but one sample exceeded the secondary maximum contaminant level (SMCL) of 500 mg/L recommended by the California Department of Public Health (CDPH) for TDS in drinking water. Given the downward flow rate of saline water, it was estimated by the U.S. Bureau of Reclamation in 2006 that the usable average life of the aquifer in Westlands is from 110 to 114 years, assuming continued farming on the physically-impaired lands without a drainage solution (USBR 2006, p. 6-2).

Due to the presence of elevated levels of selenium in the lower aquifer, groundwater pumping also brings additional selenium to the surface. It is estimated that approximately 20,000 lbs. of selenium are pumped to the surface annually within Westlands (Presser 2008, p. 2).

Under drought conditions, the added dependence on groundwater places further physical restrictions on WSP farm operations. Since the salt content of pumped groundwater is two to three times that of imported surface water, the amount of groundwater that can be blended with imported water is limited by the salt tolerance of the crops. In addition to crop salinity tolerances, growers must also be attentive to the physical limits on the amount of increasingly saline water that can be applied since irrigation systems become fowled and plugged if salt content becomes too high. Thus, at a certain salinity level, growers must either obtain additional surface water on the open market to avoid increasing the salinity of blended irrigation water, or idle their land. Under drought conditions, when the purchase price of supplemental water can be three to four times that of Contract water, WSP growers can and have opted to idle the majority of their land. During the drought years of 2012-2016, the annual average amount of

fallowed lands was 172,500 acres, or approximately 28 percent of all the lands in the District (WWD 2017).

Farmland Classification Systems

DOC Important Farmlands Mapping

The California Department of Conservation (DOC) administers and maintains the statewide Farmland Mapping and Monitoring Program (FMMP), under which farmland is mapped by several categories including Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance (DOC 2017). The 2016 FMMP mapping for the WSP plan area is shown in Figure AG-2. The categories included in the FMMP are described below, along with the amount of land in each category that occurs within the WSP plan area.

Prime Farmland. Farmland with the best combination of physical and chemical features able to sustain long term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date. The FMMP designates approximately 1,080 acres of the WSP as Prime Farmland, or approximately 5 percent of the total WSP plan area. These mapped areas encompass the Panoche loam and Westhaven soil types, located in the extreme west-central portion of the WSP site.

Farmland of Statewide Importance. Farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date. The majority of the WSP (approximately 13,017 acres) is designated as Farmland of Statewide Importance, representing approximately 62 percent of the plan area. (Note: Approximately 2,978 acres that are currently mapped as Farmland of Statewide Importance have been removed from irrigated agriculture. It is expected that this acreage will be designated as Grazing Land in subsequent rounds of FMMP mapping.)

Unique Farmland. Farmland of lesser quality soils used for the production of the state's leading agricultural crops. This land is usually irrigated, but may include non-irrigated orchards or vineyards as found in some climatic zones in California. Land must have been cropped at some time during the four years prior to the mapping date. No lands within the WSP are designated as Unique Farmland.

Farmland of Local Importance. These comprise farmland of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee. No lands within the WSP plan area are designated as Farmland of Local Importance.

Grazing Land. Land on which the existing vegetation is suited to the grazing of livestock. The minimum mapping unit for Grazing Land is 40 acres. In the eastern portion of the plan area, there is an area of approximately 6,841 acres (approximately 33 percent of the site area) that is currently designated as Grazing Land. (Note: An additional 2,978 acres within WSP have been removed from irrigated agriculture that is not reflected in the 2016 FMMP mapping. It is expected that this additional acreage will be designated as Grazing Land in subsequent rounds of FMMP mapping.)

Urban and Built-up Land. Land occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel. This land is used for residential, industrial, commercial, construction, institutional, public administration, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes. No lands within the WSP plan area are designated as Urban and Built-up Land.

Other Land. Land not included in any other mapping category. Common examples include low density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry or aquaculture facilities; strip mines, borrow pits; and water bodies smaller than forty acres. Vacant and nonagricultural land surrounded on all sides by urban development and greater than 40 acres is mapped as Other Land. No lands within the WSP plan area are designated as Other Land.

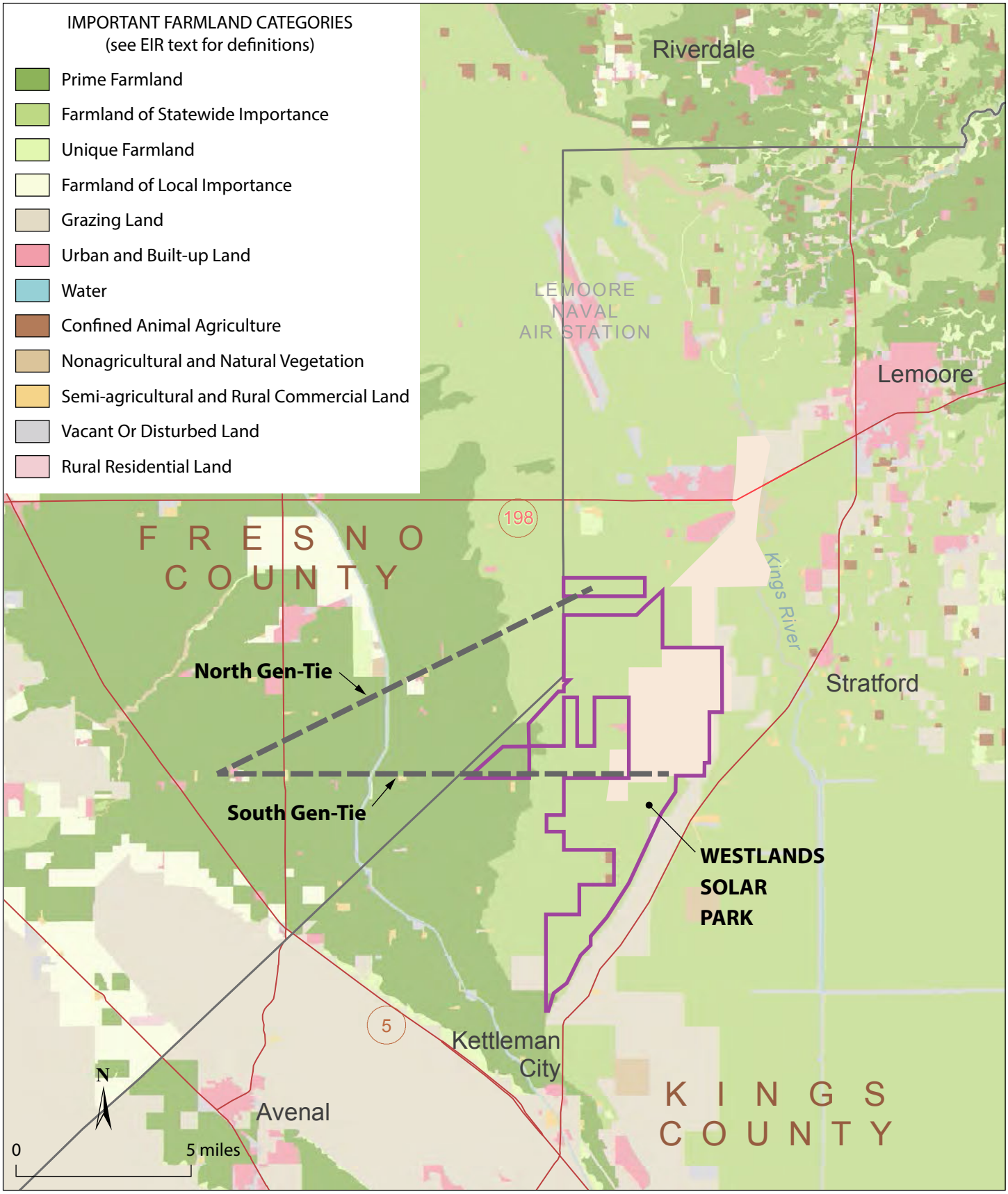
In summary, approximately 5 percent of the lands located in the extreme western portion of the WSP plan area is designated as Prime Farmland under the most recent update of the Farmland Mapping and Monitoring Program for Kings County in 2016. The majority of the plan area (62 percent) is designated as Farmland of Statewide Importance, and 33 percent is designated as Grazing Land (DOC 2017).

County Assessor's Office Definition of Prime Farmland

The Kings County Assessor's Office defines "Prime Farmland" primarily according to assessed crop value, which serves as the basis for the County annual subvention funding request to the State related to the County's implementation of Williamson Act and Farmland Security Zone Contracts. (See descriptions of each below.) As mapped in the County's General Plan Resource Conservation Element (Figure RC-10), the WSP lands defined as Prime Farmland by the County Assessor's Office are concentrated in the northern and west-central portions of the WSP site, and represent about 40 percent of the WSP acreage (Kings County 2010a).

Kings County Priority Agricultural Land Model

The Kings County Community Development Agency has developed a model which considers additional factors in defining the value of prime farmland in order to rank County farmlands on a priority basis. The factors considered in the model include soil classification, crop value, availability of water resources, the need for open space buffers between urban areas, and the planned orderly growth of communities. The resulting mapping of Priority Agricultural Land, as mapped in the General Plan Resource Conservation Element (Figure RC-13) shows the eastern and southeastern portions of the plan area as "Low Priority" or "Very Low Priority" (51% of plan area) and the central portions of the plan area as "Low-Medium Priority" (40% of plan area), while parts of the northerly and westerly portions of the plan area are mapped "Medium Priority" (7% of plan area), with small areas near the west boundaries mapped as "Medium-High Priority" (2% of plan area). No portions of the project site are mapped as "High Priority" Agricultural Lands (Kings County 2010a).



Base map: CDOC, 2017

Important Farmlands

Figure AG-2

This page intentionally left blank

WSP Gen-Tie Corridors

The lands crossed by the two WSP gen-tie corridors consist of agriculturally productive lands of the San Joaquin Valley floor. Almost all of the lands crossed by the gen-tie corridors are mapped as Important Farmland (i.e., Prime Farmland or Farmland of Statewide Importance) by the DOC under its Farmland Mapping and Monitoring Program (FMMP). (The FMMP farmland categories are described in the immediately preceding section.) Table AG-2 below shows the acreage of land in the applicable FMMP farmland categories within the planned corridors. Acreage estimates include lands within the 300-foot width of the planned transmission corridors.

As shown in Table AG-2, approximately 97 percent of the lands within the gen-tie corridors are mapped as Important Farmland, including 70 percent Prime Farmland and 27 percent Farmland of Statewide Importance (no lands are mapped as Farmland of Local Importance or Grazing Land). The remaining 3 percent of the corridors are mapped as Non-Agricultural lands (3 percent) such as urban, built-up, disturbed, and vacant lands.

TABLE AG-2

FARMLANDS WITHIN WSP GEN-TIE CORRIDORS

Gen-Tie Corridor	Length (Miles)	Important Farmlands[1] (acres[2])		Farmland of Local Importance[3]	Grazing Land	Non-Agricultural [Urban, Built-up, Disturbed, Vacant, etc.]	Total Acreage[4]
		Prime Farmlands	Farmland of Statewide Importance				
WSP-South to Gates Gen-Tie	11.5	335.1	135.8	0	0	16.9	487.8
WSP-North to Gates Gen-Tie	11.5	347.8	127.3	0	0	12.7	487.6
Totals	23.0	682.9	263.1	0	0	29.6	975.6
Percent of Total Corridor Acreage		70%	27%	0%	0%	3%	100%

[1] No lands within the gen-tie corridors are mapped as "Unique Farmlands."
[2] Acreage within 350-foot-wide gen-tie corridors.
[3] "Farmland of Local Importance" is not included in the definition of "Farmland" under CEQA Appendix G.
[4] Excludes areas within existing substation sites that are outside the 350-foot transmission corridors.
Sources: CDOC 2015a, 2017.

Table AG-3 shows cropping patterns within the transmission corridors. As shown in the table, approximately 97 percent of the total acreage within the gen-tie corridors is under cultivation. Approximately two-thirds of this cultivated acreage comprises row crops (cotton, wheat, barley, tomatoes, corn, alfalfa), with the other third consisting primarily of tree crops (almonds, pistachios), along with a relatively small acreage devoted to vineyard crops (grapes).

TABLE AG-3

CROPPING PATTERNS WITHIN WSP GEN-TIE CORRIDORS

Gen-Tie Corridor	Length (Miles)	Agricultural Use (Acres*)					Total Acreage
		Row Crops (incl. Fallow)	Tree Crops	Vineyards	Grazing Land	Non-Agricultural	
WSP-South to Gates Gen-Tie	11.5	290.8	159.1	21.1	0	16.8	487.8
WSP-North to Gates Gen-Tie	11.5	335.1	140.0	0	0	12.7	487.8
Totals	23.0	625.9	299.1	21.1	0	29.5	975.6
Percent of Total Corridor Acreage		64%	31%	2%	0%	3%	100%

* Acreage within 350-foot wide gen-tie corridors.
Source: Google Earth 2017.

3.2.2. REGULATORY CONTEXT

State

Williamson Act

The California Land Conservation Act of 1965, commonly referred to as the Williamson Act, enables local governments to enter into contracts with private landowners for the purpose of placing lands within "Agricultural Preserves" thus restricting the use of those lands to agricultural or related open space use. In return, landowners receive property tax assessments which are much lower than normal because they are based upon the value of the land for farming and open space uses as opposed to full market value. The initial term of a Land Conservation Contract is 10 years, with the contracts automatically renewing for an additional year on January 1 of each year. The automatic renewal continues indefinitely unless a notice of non-renewal or contract cancellation is filed. If a non-renewal is filed, the contract then does not renew itself and begins to phase out of the Agricultural Preserve Program over a ten year period with the tax assessment of the property gradually increasing to an amount equal with what would normally be assessed if the property had not been placed under contract. Non-renewals involve no penalties, while contract cancellations are subject to a penalty fee of 12.5 percent of the assessed land value.

1998 Amendments to Williamson Act – Farmland Security Zones

In 1998, the Williamson Act was amended to expand the provisions and include additional tax benefits to agricultural land owners who entered into a 20-year Farmland Security Zone Contract. The same automatic contract renewals occur annually as under Williamson Act contracts. No land can be included in a Farmland Security Zone unless requested by the landowner, and any land located within a city's sphere of influence cannot be included unless the creation has been approved by the city with jurisdiction within the sphere of influence. As with conventional Williamson Act contracts, non-renewals

involve no penalties, while contract cancellations are subject to a penalty fee of 25 percent of the assessed land value.

In general, each Land Conservation Contract or Farmland Security Zone Contract stipulates that the property in an Agricultural Preserve or Farmland Security Zone may not be used for any other purpose than the production of agricultural products for commercial purposes and related uses and compatible uses. Utility corridors such as transmission easements are considered compatible with agricultural uses under the Williamson Act (Government Code Section 51238).

According to the most recent Kings County Agricultural Preserves mapping of October 8, 2013, approximately 26 percent of the WSP plan area is under Williamson Act Land Conservation contracts, and approximately 25 percent is in Farmland Security Zone contracts. These lands comprise all of the irrigated farmland within the WSP plan area. The remaining 49 percent, located in the eastern and southeastern portions of the plan area, is not covered by either program. These lands comprise all of the non-irrigated farmland within the WSP plan area (Kings County 2013).

2011 Amendments to Williamson Act – Solar-Use Easements – SB 618 (Wolk)

Senate Bill 618, which took effect on January 1, 2012, is intended to provide a third method for terminating Williamson Act Contracts (including Farmland Security Zone Contracts), in addition to the non-renewal and cancellation methods described above. In particular, the bill allows for the rescission of existing contracts for the purpose of placing the contracted lands into solar-use easements for the purpose of photovoltaic electricity generation. Contract rescission under Bill 618 is only permitted if it can be shown that the lands are physically impaired or marginally productive for agricultural production. In particular, Section 51191(a)(1) provides that lands are eligible for contract rescission if one of the following criteria is met:

(A) The land consists predominantly of soils with significantly reduced agricultural productivity for agricultural activities due to chemical or physical limitations, topography, drainage, flooding, adverse soil conditions, or other physical reasons.
(B) The land has severe adverse soil conditions that are detrimental to continued agricultural activities and production. Severely adverse soil conditions may include, but are not limited to, contamination by salts or selenium, or other naturally occurring contaminants.

If the lands proposed for rescission are designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance under the State's Farmland Mapping and Monitoring Program, the determination as to whether the lands qualify for rescission under SB 618 is subject to the prior approval by the Department of Conservation. Upon the County's rescission of Williamson Act Contracts and simultaneous placement of the lands into solar-use easement, the rescission fee of 10 percent of the fair market value of the land is assessed, on Williamson Act lands or Farmland Security Zone lands, half of which is to be deposited in the State General Fund.

The Bill provides that solar-use easements shall restrict the use of the land for photovoltaic generation and incidental uses, either in perpetuity or for a term of not less than 10 years. A solar use easement for a term of years is subject to the same automatic annual self-renewal provisions that apply to other forms of Williamson Act Contracts. A solar-use easement may be extinguished through notice of non-renewal, which will end the automatic renewals, or a landowner may petition the County to approve termination

of the easement sooner if the land will no longer be used for photovoltaic solar generation. Alternatively, the landowner may return the land to its previous Land Conservation Contract. Approval of easement termination prior to the running of the 9-year non-renewal period is subject to fees of up to 12.5 percent of the termination value of the land.

The Bill requires that when a solar-use easement is extinguished, the landowner shall restore the land that is subject to the easement to the conditions that existed prior to the placement of the easement on the land. The Bill also requires that the landowner post a performance bond or other securities to fund restoration of the land by the time the easement terminates.

As of this writing (October 2017), the County of Kings had not adopted regulations for the implementation of SB 618 solar use easements within Kings County. However, the Kings County Williamson Act Implementation Procedures, described below, provide for solar development on contract lands where prescribed findings can be made regarding compatibility of solar facilities with continued on-site agricultural use. This is described in detail subsequently in this section.

Kings County

Kings County General Plan

There are two agricultural general plan land use designations that together cover the Westlands Solar Park. These include "General Agriculture – 40 acre" which covers approximately 61 percent of the plan area, and "Exclusive Agriculture – 40 acre" which covers approximately 39 percent of the plan area. The General Agriculture designation generally applies to areas south of Kansas Avenue, and the Exclusive Agriculture designation applies to areas within the flight paths of the Naval Air Station Lemoore. Both of these designations fall under the broader General Plan category of Agricultural Open Space. In addition to a range of agricultural uses and ancillary activities, the General Plan allows solar voltaic generating facilities within the Agricultural Open Space areas of the County, as provided in LU Policy B7.1.3, which is set forth below. Energy producing facilities are allowed in the Exclusive Agriculture zone where such facilities would not create a hazard for aircraft, as set forth in RC Policy A1.2.4, as set forth below.

The 2035 Kings County General Plan includes the following goals, objectives and policies related to agricultural resources that are relevant to the Westlands Solar Park:

Land Use Element

LU GOAL B7 Community benefiting non-agricultural uses remain compatible within the County's Agricultural Open Space area, and are supported for their continued operation and existence.

LU OBJECTIVE B7.1
Allow compatible Open Space and Public uses of land within the Agriculture Open Space area of the County.

LU Policy B7.1.3: Power generation facilities for commercial markets shall be allowed and regulated through the Conditional Use Permit approval process, and include

thermal, wind, and solar photovoltaic electrical generating facilities that produce power.

Resource Conservation Element

A. Water Resources

RC GOAL A1 Beneficially use, efficiently manage, and protect water resources while developing strategies to capture additional water sources that may become available to ensure long-term sustainable water supplies for the region.

RC OBJECTIVE A1.4
Protect the quality of surface water and groundwater resources in accordance with applicable federal, state and regional requirements and regulations.

RC Policy A1.4.4: Encourage and support the identification of degraded surface water and groundwater resources and promote restoration where appropriate.

B. Agricultural Resources

RC Goal B1 Maintain viable and productive agricultural land within the County, and ensure that long term preservation of the County's agricultural resources continue to provide a sustainable food supply and supports a vibrant local agricultural economy.

RC OBJECTIVE B1.1
Identify the County's highest priority agricultural lands that are critical to the County's agricultural economy, prime soils, and water availability, and emphasize higher preservation efforts for these areas.

RC Policy B1.1.2: Use the Priority Agricultural Model as a reference for determining potential economic and resource impacts related to the loss of agricultural land resulting from conversion to urban uses.

RC OBJECTIVE B1.2
Identify the County's highest priority agricultural lands that are critical to the County's agricultural economy, prime soils, and water availability, and emphasize higher preservation efforts for these areas.

RC Policy B1.1.2: Use the Priority Agricultural Model as a reference for determining potential economic and resource impacts related to the loss of agricultural land resulting from conversion to urban uses.

RC OBJECTIVE B1.3
Establish feasible mitigation for the loss of agricultural land conversion that is not over burdensome to landowner and development interests, yet enhances long term preservation efforts of the County's highest priority agricultural lands.

RC Policy B1.2.1: Require new development that results in the loss of agricultural lands to provide mitigation to offset the loss. The County's Farmland Mitigation Strategy shall require comparable acreage enrollment in the County's Farmland Security Zone.

RC Policy B1.2.2: Conversion of agricultural land to urban uses shall require payment of mitigation fees that are based on average per acre fee for the establishment of a new Farmland Security Zone creation. All mitigation costs shall be borne by project proponent(s).

RC Policy B1.2.3: Under the County's existing system program, mitigation fees shall be used for the creation of new Farmland Security Zone contracts only and applied on willing landowner property that is greater than 10 acres and located within the "Medium," "Medium-High" and "Highest" Priority Agricultural Land as defined under the County's Priority Agricultural Land Model, and within the eligible Department of Conservation farmland classifications as required by the *California Land Conservation Act of 1965.*

A. Energy Resources

RC OBJECTIVE G1.2
Promote the development of sustainable and renewable alternative energy sources, including wind, solar, hydroelectric and biomass energy.

RC Policy G1.2.2: Encourage and support efforts to develop commercial alternative energy sources in lower priority agricultural lands within Kings County, when appropriately sited.

RC Policy A1.2.4: Coordinate the siting of alternative energy facilities within the Exclusive Agriculture (AX) Zone District with the Naval Air Station Lemoore to ensure such facilities will not have the potential to create a hazard for aircraft (e.g. reflective solar panels).

Kings County Development Code

As designated in the Kings County Zoning Plan, the majority of WSP plan area is currently zoned as "General Agriculture (AG-40)" except for approximately 968 acres north of the Kansas Avenue alignment which are zoned "Exclusive Agriculture (AX)." As provided in Article 4 of the Kings County Development Code, both of these agricultural zoning districts specifically allow utility-scale photovoltaic electricity generation as a conditionally permitted use. Both zoning districts have a general minimum parcel size requirement of 40 acres, except that parcel sizes as small as one acre are permitted for a range of uses, including solar voltaic generating facilities, subject to the granting of a conditional use permit (Kings County 2016).

Article 11, Section 1112.B.2 of the Kings County Development Code requires that commercial-scale solar photovoltaic electrical facilities shall be subject to certain specified standards (Kings County 2016). The required standards, and the consistency of WSP solar development with those standards, are addressed under Impact AG-2 below.

With respect to electrical substations and transmission lines, the Kings County Development Code permits electrical substations within agricultural zones without a permit, and transmission lines are subject to review by the zoning administrator (Kings County 2016).

Right-to-Farm Ordinance

The Kings County Code of Ordinances Section 14-36.1, the "Notice of Disclosure and Acknowledgment of Agricultural Land Use Protection and Right to Farm Policies of the County of Kings," (Right-to-Farm) requires that the approvals of rezonings, land divisions, zoning permits, and residential building permits include a condition that notice and disclosure be provided, which is to be recorded with the property title, that specifically acknowledges and notifies all future owners that they are in proximity to agricultural uses, and lists the types of operations and possible nuisances or inconveniences associated with farming such as equipment and animal noises; farming activities conducted on a 24-hour, 7-day a week basis; odors from manure, fertilizers, pesticides, chemicals, or other sources; the aerial and ground application of chemicals and seeds, dust; flies and other insects; and smoke. The ordinance states that the County does not consider normal farming operations involving these activities and effects to be a nuisance, and that current owners and future purchasers should be prepared to accept such annoyances or discomfort from normal, usual, and customary agricultural operations, facilities, and practices. This right-to-farm disclosure and acknowledgement establishes the primacy of agricultural operations over other land uses, and would reduce the potential for conflict which could adversely affect the continued viability of such adjacent agricultural operations (Kings County 1996).

Kings County Williamson Act Implementation Procedures

The Williamson Act stipulates that local governments adopt rules governing the administration of agricultural preserves, including rules related to compatible uses, provided the rules are consistent with the following principles of compatibility (Gov. Code § 51231).

Gov. Code § 51238.1(a) Uses approved on contracted lands shall be consistent with all of the following principles of compatibility:

(1) The use will not significantly compromise the long-term productive agricultural capability of the subject contracted parcel or parcels or on other contracted lands in agricultural preserve.
(2) The use will not significantly displace or impair current or reasonably foreseeable agricultural operations on the subject contracted parcel or parcels or on other contracted lands in agricultural preserves. Uses that significantly displace agricultural operations on the subject contracted parcel or parcels 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.
(3) The use will not result in the significant removal of adjacent contracted land from agricultural or open-space use.

As required under the Williamson Act, the County has established procedures for implementation of the Act at the local level. Those implementation procedures include *Uniform Rules for Agricultural Preserves in Kings County*, which identifies the uses that shall be permitted as "Commercial Agricultural Uses," and "Compatible Uses," on lands under Williamson Act contracts, including Farmland Security Zone contracts. Permitted compatible uses include single-family residences, accessory structures, agricultural processing

facilities, gas and oil wells, and public utility and public service structures and buildings, among other uses.

The current Kings County Williamson Act implementing procedures include the following uniform rules for agricultural preserves that pertain to solar photovoltaic facilities:

> "Commercial solar photovoltaic system facilities that are designed primarily for the production of electrical energy for third party consumption are not compatible under the provisions of Government Code Section 51238.1(a). For purposes of determining compatibility, a project must be determined consistent with the principles of compatibility under Section 51238.1(a). Ordinarily, a solar project will be found compatible if the applicant provides a soil reclamation plan and financial assurances, and if the economic output of agricultural operations on the contracted parcel or parcels on which the project is located will be 90-percent of pre-project output. However, on November 26, 2013, the Board of Supervisors adopted Resolution No. 13-058, recognizing that due to reduced surface water deliveries, poor groundwater quality and severe groundwater overdrafts, impaired soil conditions, and regulatory burdens, circumstances exist on agricultural preserves located within that portion of Kings County south of State Route 198, west of State Route 41, and northeast of Interstate 5 that limit the use of much of the land within the territory for agricultural activities, such that it is reasonably foreseeable that certain parcels located there that currently are used for more intensive agricultural activities will be used in the near future for less intensive uses, including dry farm seasonal grazing. Notwithstanding the present agricultural use of the land, solar farming as a concomitant use with dry farm seasonal grazing or similar commercial agricultural activity may be deemed a compatible use within this region of the County if the applicant provides a soil reclamation plan and financial assurances, and if a finding can be made, based upon substantial evidence, and taking into account surface water availability, ground water quality and availability, and soil conditions, that the proposed concomitant commercial agricultural operation is a reasonably foreseeable use of the land (Kings County 2013)."

Fresno County

Fresno County General Plan

Most of the WSP gen-tie corridor length is located in Fresno County, which includes approximately 17 miles of the total 23 miles of transmission corridor. All of the lands traversed by the gen-tie corridors are designated Agriculture in the Fresno County General Plan. The Agriculture and Land Use Element of the General Plan allows electrical substations in Agriculture-designated lands, but transmission lines are not mentioned. Land Use policy LU-A.14 states that mitigation for conversion of productive agricultural land is required where appropriate, but does not specify the nature of the mitigation in policy and there is no corresponding implementing program (Fresno County 2000).

Fresno County Zoning Code

The Fresno County Zoning Code permits electrical substations in agricultural zones subject to Director's review and approval. Privately owned and operated transmission or gen-tie lines that are not subject to CPUC's sole jurisdiction are subject to the County's unclassified conditional use permit procedures under Zoning Code Section 853(B)14 (Fresno County 2011).

3.2.3. ENVIRONMENTAL IMPACT ANALYSIS

SIGNIFICANCE CRITERIA

Based on the State CEQA Guidelines, Appendix G, the project would be considered to have a significant impact upon agricultural resources if it would:

a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program (FMMP) of the California Resources Agency, to non-agricultural use. (Impact AG-1.)

b. Conflict with existing zoning for agricultural use, or a Williamson Act contract. (Impact AG-2.)

c. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use. (Impacts AG-3 and AG-4.)

IMPACTS AND MITIGATION

Impact AG-1. Agricultural Land Conversion

***Westlands Solar Park*. The WSP plan area includes "Farmland" which would be subject to solar development. (*Less-than-Significant Impact with Mitigation*)**

***Westlands Transmission Corridors*. The WSP gen-tie lines would result in the permanent loss of "Farmland" at tower locations. However, the losses would consist of a number of very small pieces of farmland displaced by the tower footings, which would be dispersed over the length of the corridors and would involve a total of approximately 2 acres of "Farmland" removal throughout the entire 23-mile length of the gen-tie corridors. This small acreage of farmland conversion is not considered a significant loss of "Farmland." (*Less-than-Significant Impact*)**

This impact analysis addresses significance criterion 'a' above.

Westlands Solar Park

As discussed in Section *3.2.1 Environmental Setting* above, the Department of Conservation's (DOC) FMMP map "Important Farmland Kings County 2014" identifies approximately 1,080 acres within the WSP plan area as Prime Farmland, and about 13,017 acres as Farmland of Statewide Importance, with the remaining 6,841 acres mapped as Grazing Land. Therefore, approximately 14,097 acres are considered "Farmland" under CEQA (based on the 2016 Important Farmland map), with the remaining Grazing Lands not classified as "Farmland."

Impacts to Grazing Land

Under DOC's Farmland Mapping and Monitoring Program, the mapping of lands as Prime Farmland or Farmland of Statewide Importance depends on whether those lands are irrigated. As discussed above, both of these mapping categories include only those lands that have been used for irrigated agricultural production at some time during the four years prior to the mapping date. Within the eastern half of the WSP plan area, there are a total of 9,819 acres that have not been irrigated since the mid-2000s. While 6,841 acres of this area are recognized in FMMP's 2016 Important Farmland map as non-irrigated by the Grazing Land classification, it is expected that the remaining 2,978 acres will be remapped as Grazing Land in the next biennial FMMP mapping cycle. As such, it is anticipated that the 2018 Important Farmland mapping for Kings County will include the mapping of approximately 9,819 acres of the WSP plan area as Grazing Land.

Grazing Land is not considered to fall under the definition of "Farmland" under CEQA Guidelines Appendix G (see item 'a' in *Significance Criteria* above). As such, the conversion of lands mapped as Grazing Land under FMMP to non-agricultural uses is not considered a significant impact under CEQA. Also, all WSP lands mapped as Grazing Lands (or anticipated to be so mapped in the near future) are designated under the Kings County Priority Agricultural Lands Model as "Low-Medium Priority" or lower, and therefore would not require off-site mitigation under the Kings County Development Code. Therefore, at the time of CUP review for individual WSP solar projects, any projects proposed on lands that are mapped as Grazing Land under the then-current Important Farmland Map for Kings County, would result in a *less-than-significant* impact to agricultural resources under CEQA. [Note, however, that any solar projects proposed on such lands that are subject to Williamson Act Contracts or Farmland Security Zone Contracts would be subject to Mitigation Measure AG-1 below. Also, all WSP solar projects, including those on "Grazing Land," are subject to Mitigation Measures AG-2 (soil reclamation) and AG-3 (financial assurance) since these actions are required by the Kings County Development Code.]

Impacts to Irrigated Farmland

While about 11,119 acres (or about 53 percent of the WSP plan area) are irrigated farmlands, these lands are subject to severe physical impairments which reduce their viability for agricultural production. As discussed in Section *3.2.1 Environmental Setting* above, all of the WSP lands are designated as "drainage impaired" under the Bureau of Reclamation's San Luis Drainage Feature Re-evaluation. The designation of drainage impairment reflects the increasing physical impairment of soils due to: ongoing accumulation of salts (in soils that have suboptimal native fertility); perched groundwater and lack of subsurface drainage systems; chronic shortages and unreliability of surface water deliveries; and increasing salinity of groundwater used as a supplemental source of irrigation supplies. In addition, the ongoing drought conditions of recent years has exacerbated these conditions and also resulted in substantial pumping of groundwater and drawdown of the lower aquifer's groundwater table.

<u>Solar Uses Intended to Operate for a Limited Duration of 25 to 30 Years</u>

An important consideration in the evaluation of farmland conversion impacts is whether the alternative use results in a permanent loss of the farmland. As discussed in Chapter *2. Project Description*, the solar PV generating facilities proposed for construction in WSP are estimated to have a productive life of approximately 25-30 years, after which the solar facilities would be decommissioned and the land reclaimed. As such, the use of the WSP lands for solar generation would involve a relatively short-term

commitment to solar generation followed by decommissioning and site reclamation. However, unless individual solar projects are subject to conditions of approval which would set forth specific actions to be undertaken to ensure that effective reclamation is implemented to restore the soils to their pre-project condition, it cannot be concluded with a certainty that such effective reclamation would in fact occur upon decommissioning. As such, the possibility remains that WSP solar development could result in permanent loss farmland over the long-term. Therefore, the potential that WSP solar development would result in the permanent conversion of "Farmland" (Prime Farmland, Unique Farmland, or Farmland of Statewide Importance) to non-agricultural uses represents a *potentially significant impact*.

Agricultural Production to Occur Concomitantly with Solar Use on Each Solar Project

Since solar arrays are mounted on posts and raised several feet above ground level, less than 10 percent of typical SGFs are subject to coverage by equipment, buildings, and internal driveways. The remaining 90 percent remains as pervious surfaces which are planned be revegetated with native grasses. In order to maintain site conditions that are conducive to continued agricultural production concomitantly with solar use, the pervious areas of the sites are intended to be managed as non-irrigated pasture for sheep grazing. In this way, agricultural production on the solar facility sites is to be maintained for the life of each solar operation. However, unless individual solar projects are subject to conditions which would set forth specific actions to be undertaken to ensure that agricultural production occurs throughout the life of each solar project, it cannot be concluded with a certainty that such agricultural production practices would be established and maintained on a continuing basis. As such, the possibility remains that WSP farmland may be subject to short term or temporary conversion during the life of the WSP solar projects. Therefore, the potential that WSP solar development would result in the short-term or temporary conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural uses represents a *potentially significant impact*.

In summary, due to adverse physical conditions which place severe constraints on agricultural productivity on WSP farmlands, the viability of agricultural production within irrigated areas of WSP is substantially reduced. In addition, the intent of WSP solar development is to prevent the permanent conversion of Farmland by reclaiming each solar project site upon decommissioning, and to avoid temporary conversion of Farmland during solar project operation by continuing agricultural production on each site, and to prevent the permanent conversion of farmland by reclaiming each solar project site upon decommissioning. The temporary and permanent protection of Farmland would be ensured through implementation of Mitigation Measures AG-1, AG-2, and AG-3 below, which would reduce the impact to Farmland to *less than significant*.

WSP Gen-Tie Corridors

As discussed in Section *3.2.1. Environmental Setting*, approximately 97 percent of the land area within the planned gen-tie corridors consists of Farmland, including predominantly Prime Farmland. Cultivated lands also make up about 97 percent of the total corridor land area, of which approximately two-thirds is in row crops and one-third is in tree crops and vineyards.

The construction of the gen-tie lines would involve temporary disturbance of agricultural operations where farmlands would be traversed by temporary construction access driveways, pulling and tensioning sites, and potentially construction staging and storage areas. While these construction activities would result in

temporary impacts to agricultural operations, they would not result in permanent loss of farmland. The temporary construction impacts to agricultural operations are addressed under Impact AG-3 below.

Permanent loss of Farmland would occur only at the tower footings. Each monopole would be supported by a cylindrical poured concrete footing up to 10 feet in diameter, resulting in the direct displacement of up to 78.5 square feet of Farmland by each footings. For purposes of this analysis, it was assumed that vegetation clearance areas would extend 10 feet outward from each footing. While the agricultural soils in these clearance areas would not be lost, the agricultural production within these areas would effectively cease. Beyond these clearance areas, agricultural cultivation would continue unimpeded. The combined area occupied by the footing and clearance area at each monopole site would total 707 square feet. Based on these parameters, the Farmland loss estimates for the gen-tie projects are shown in Table AG-4.

TABLE AG-4

ESTIMATED LOSS OF FARMLAND IN WSP GEN-TIE CORRIDORS

	Total Number of Monopoles	Total Area of Displacement at Each Monopole Site (acres)	Total Displacement (acres)	Percentage of Gen-Tie Corridors in Areas Mapped as "Farmland"*	Total Farmland Loss (acres)
Gen-Tie Corridors	115	0.01623 ac.	1.87 ac.	97%	1.81 ac.

* As mapped by the Department of Conservation, Farmland Monitoring and Mapping Program in 2014 (Fresno County), and 2016 (Kings County). Farmland includes Prime Farmland, Farmland of Statewide Importance, and Unique Farmland, although the latter are not found in the transmission corridors. Farmland of Local Importance is not included in the definition of "Farmland" in CEQA Guidelines Appendix G).

Assumptions:

1. Total length of gen-tie corridors = 23.0 miles.
2. Monopoles per mile of corridor = 5.0 on average.
3. Permanent displacement area at each monopole site = 707 sq. ft. (0.01623 acres).

Upon completion of the gen-tie projects, it is estimated that approximately 1.81 acres of Farmland would be permanently displaced by monopole footings and surrounding clearance areas. These losses would consist of a 115 very small pieces of Farmland which would be dispersed over the 23-mile total length of the gen-tie lines. Given the very small acreage of overall Farmland that would be lost, and the dispersed nature of the loss, the impact to Farmland would not be significant.

In summary, the impact of the WSP gen-tie projects on Farmland would be *less than significant*.

Mitigation Measures:

Westlands Solar Park. **In order to reduce the impacts of WSP solar projects to "Farmland" within the WSP plan area to less-than-significant levels, MMs AG-1, AG-2, and AG-3 shall be implemented in conjunction with each WSP solar project that is mapped as "Prime Farmland", "Unique Farmland", or**

"Farmland of Statewide Importance" under the version of DOC's "Important Farmland Kings County" map that is current at the time of approval of the CUP application of that WSP solar project. In addition, all WSP solar projects shall implement MM AG-2 and AG-3 pursuant to the Kings County Development Code.

MM AG-1 **Agricultural Management Plan. Prior to the issuance of a building permit for each WSP solar project proposed on "Farmland," the applicant shall submit to Kings County an Agricultural Management Plan (AMP) that provides for the ongoing agricultural productivity of the site for the life of the project. The AMP shall specify that at least 90 percent of the site shall be vegetated with grasses and forbs and shall be managed for dry farm seasonal sheep grazing. The AMP shall include specific provisions for soil preparation and revegetation including specifications for a seed mix which is appropriate to the soil and climatic conditions in the absence of irrigation, methods of avoiding invasive species, and a list of acceptable vegetation that meets the dietary needs of sheep. The AMP shall include detailed provisions to ensure the successful establishment of the planned vegetative cover, and shall identify appropriate maintenance activities, including conditions under which herbicides may be used, and particularly the identification and selection of herbicides that are non-toxic to livestock and wildlife. The AMP shall also comply with the requirements of the Kings County Development Code related to weed abatement and pest control.**

MM AG-2 **Soil Reclamation Plan. Prior to the issuance of a building permit for each WSP solar project proposed anywhere within the WSP Plan Area, the applicant shall submit, for review and approval by the Kings County Community Development Agency, a Soil Reclamation Plan (Plan) for the restoration of the project site at the end of its useful life. The Plan shall contain an analysis of pre-construction conditions of the solar generating facility site, the site shall be photographically documented by the applicant prior to the start of construction. The Plan shall contain specific measures to restore the soil to approximate its pre-project condition, including (1) removal of all above-ground and below-ground project fixtures, equipment, and non-agricultural driveways, (2) tilling to restore the sub-grade material to a density and depth consistent with its pre-project condition, (3) revegetation using Kings County-approved grasses and forbs seed mixture designed to maximize revegetation with noninvasive species shall be broadcast or drilled across the project site, (4) application of a weed-free mulch spread, as needed, to stabilize the soil until germination occurs and young plants are established to facilitate moisture retention in the soil. Whether the project area has been restored to pre-construction conditions shall be assessed by Kings County staff. All waste associated shall be disposed of or recycled in accordance with applicable laws. The applicant shall verify the completion of reclamation within 18 months after expiration of the project use permit with Kings County Planning Division staff. [Note: This mitigation measure would be a requirement for all WSP solar development under the Kings County Development Code which requires reclamation of all solar facility sites upon decommissioning.]**

MM AG-3 **Financial Assurance. Prior to the issuance of a building permit for each WSP solar project anywhere within the WSP Plan Area, the applicant shall post a performance or**

cash bond, submit a Certificate of Deposit, submit a letter of credit, or provide such other financial assurances acceptable to the County, in an amount provided in an Engineer's Cost Estimate, approved by the Kings County Community Development Agency, to ensure completion of the activities under the Soil Reclamation Plan. Every 5 years from the date of completion of construction of the project, the applicant shall submit an updated Engineer's Cost Estimate for financial assurances for the Plan, which will be reviewed every 5 years by the Kings County Community Development Agency to determine if the amount of the assurances is sufficient to perform reclamation of the project. The amount of the assurances must be adjusted if, during the five-year review, the amount is determined to be insufficient to implement the Plan. [Note: This mitigation measure would be a requirement for all WSP solar development under the Kings County Development Code which requires financial assurance for reclamation of all solar facility sites upon decommissioning.]

By requiring that agricultural production is to continue on 90 percent of each WSP solar project proposed on lands mapped as "Farmland" by DOC, in the manner specified in the Agricultural Management Plan in Mitigation Measure AG-1, the impact from the temporary and concomitant use of the "Farmland" within the WSP plan area for non-agricultural uses would be reduced to a less-than-significant level during the operational life of the project.

By requiring that each WSP solar facility site be restored to its pre-project baseline conditions following decommissioning of the facility, pursuant to the Soil Reclamation Plan specified in Mitigation Measure AG-2, and as ensured by the accompanying Financial Assurance stipulated in Mitigation Measure AG-3, the impact from the potential permanent conversion of all agricultural land within the WSP plan area to non-agricultural use would be reduced to a less-than-significant level. In conclusion, with the incorporation of the above-specified agricultural mitigation measures into each the WSP solar project, the potential impact to agricultural land resulting from WSP solar development would be *less than significant*.

***WSP Gen-Tie Corridors*. No mitigation is required.**

Impact AG-2. Conflict with Agricultural Zoning and Williamson Act

***Westlands Solar Park*. The proposed solar land use is consistent with the existing Kings County agricultural zoning for the plan area, under which utility-scale solar development is a conditionally permitted use. Substantial portions of the WSP plan area are under Williamson Act or Farmland Security Zone Contracts; therefore, WSP solar projects would represent a potentially significant impact to contracted lands unless the solar projects meet the County's compatibility criteria for development on properties subject to Williamson Act programs. (*Less-than-Significant Impact with Mitigation*)**

***WSP Gen-Tie Corridors*. Transmission lines are considered compatible uses under the Williamson Act, and are permitted uses in the applicable agricultural zoning districts in Kings and Fresno Counties, where the gen-ties corridors are located. (*Less-than-Significant Impact*)**

This impact analysis addresses significance criterion 'b' above.

Westlands Solar Park

Williamson Act

As discussed in Section *3.2.1 Environmental Setting* above, approximately 23 percent of the WSP site is under Williamson Act Land Conservation contracts, and approximately 30 percent of the site is under Farmland Security Zone (FSZ) contracts, with the remaining acreage covered by neither program. (It is noted that all of the contracted land is classified as Prime Farmland or Farmland of Statewide Importance by the FMMP.) For the 47 percent of WSP lands that are not under Williamson Act or FSZ contracts, the solar development of these lands would not conflict with such contracts. (It is noted that all of the non-contracted land consists of Grazing Land as classified by the FMMP.) Therefore, the Williamson Act impacts of WSP solar development on lands not under contract would be less than significant.

For WSP solar projects on lands that are under Williamson Act or FSZ contracts at the time they are proposed for construction, it is anticipated that these solar projects would avoid conflict with the contracts by maintaining a use on each project site that meets the principles of compatibility pursuant to Government Code Section 51238.1(a) by maintaining reasonably foreseeable agricultural operations on the project site. This is discussed in detail below in terms of the applicable sections of the Government Code.

Government Code Section 51238.1 (a) Uses approved on contracted lands shall be consistent with all of the following principles of compatibility:

(1) The use will not significantly compromise the long-term productive agricultural capability of the subject contracted parcel or parcels or on other contracted land in agricultural preserves.

Discussion. The productive agricultural capability of each WSP solar project site subject to Williamson or FSZ contracts would be maintained during the life of each project by implementation of an Agricultural Management Plan (AMP) as required under MM AG-1 above for land classified as "Farmland" under FMMP. [Note: All WSP lands subject to Williamson or FSZ contracts are mapped as "Farmland."] Each AMP would specify the ongoing maintenance of vegetative cover over the site for sheep grazing. Since approximately 90 percent of each solar project site would be maintained in vegetated cover, the use of the sites for solar generation would not prevent the productive concomitant agricultural use of the sites during solar facility operation. The very light footprint of the solar generating facilities on each site would allow for the preservation of native soil cover in place and allow for low impact removal of solar arrays and electrical equipment at the end of each facility's productive life. The long-term productive agricultural capability of each site after decommissioning of the solar generating facility would be ensured through implementation of Mitigation Measure AG-2 which requires implementation of a Soil Reclamation Plan and contains detailed provisions on decommissioning, soil conditioning, revegetation, waste disposal, monitoring, and follow-up

measures to ensure that each solar facility site has been effectively restored to pre-project conditions.

Solar facility operations would generally involve low levels of on-site activity consisting of occasional visits by maintenance crews, and periodic visits by panel cleaning and vegetation maintenance crews. Traffic generation would be very light, thus minimizing the potential for conflicts with agricultural vehicles and equipment on public roadways. Dust generation during project operations would not occur since the project would include no exposed soils that could be mobilized as windborne dust (e.g., 90 percent of each site would be vegetated; approximately 9 percent of each site would consist of durable dust free driveway surface as required by the Kings County Improvement Standards, and about 1 percent of each site would be covered by impervious surfaces of equipment pads).

The potential introduction of invasive weed species by the solar projects would be minimized through revegetation of sites the in accordance with the Agricultural Management Plan required for each solar project under Mitigation Measure AG-1, which requires revegetation with weed-free seed mix and weed free mulch. The introduction of weeds would be further minimized through implementation of the Weed Abatement Plan required under Article 11, Section 1112.B.2.e of the Kings County Development Code. The County's Right-to-Farm Ordinance would ensure that adjacent and nearby agricultural operations are not constrained by the need to reduce or eliminate minor incidental effects of cultivation upon adjacent and nearby solar facility operations. During project construction and decommissioning, the disturbance of soil could potentially generate dust. However, these project phases would be temporary in duration, typically lasting one year or less. Thus the impact of potential dust generation on the long-term productive agricultural capability of adjacent and nearby lands would not be significant. The less-than-significant impact with respect to dust generation would be further reduced through implementation of Dust Control Plans to be approved by the San Joaquin Valley Air Pollution Control District prior to commencement of ground disturbing activities on each solar project site, pursuant to Air District Rule 8021.

(2) The use will not significantly displace or impair current or other reasonably foreseeable agricultural operations. Uses that significantly displace agricultural operations on the subject contracted parcel or parcels 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.

Discussion. In accordance with Government Code Section 51231, Kings County has adopted procedures for implementing the Williamson Act at the local government level, including rules related to compatible uses that are consistent with the Williamson Act's principles of compatibility. As discussed in Section *3.2.2. Regulatory Context* above, the current Kings County Williamson Act implementing procedures provide the following specific guidance in considering the compatibility of solar photovoltaic facilities in agricultural preserves:

"Ordinarily, a solar project will be found compatible if the applicant provides a soil reclamation plan and financial assurances, and if the economic output of agricultural operations on the contracted parcel or parcels on which the project is located will be 90-percent of pre-project output. However, on November 26, 2013, the Board of Supervisors adopted Resolution No. 13-058, recognizing that due to reduced surface water deliveries, poor groundwater quality and severe groundwater

overdrafts, impaired soil conditions, and regulatory burdens, circumstances exist on agricultural preserves located within that portion of Kings County south of State Route 198, west of State Route 41, and northeast of Interstate 5 that limit the use of much of the land with the territory for agricultural activities, such that it is reasonably foreseeable that certain parcels located there that currently are used for more intensive agricultural activities will be used in the near future for less intensive uses, including dry farm seasonal grazing. Notwithstanding the present agricultural use of the land, solar farming as a concomitant use with dry farm seasonal grazing or similar commercial agricultural activity may be deemed a compatible use within this region of the County if the applicant provides a soil reclamation plan and financial assurances, and if a finding can be made, based upon substantial evidence, and taking into account surface water availability, ground water quality and availability, and soil conditions, that the proposed concomitant commercial agricultural operation is a reasonably foreseeable use of the land (Kings County 2013).

The following is a point-by-point evaluation of the consistency of WSP solar development with the above County guidance.

First, the entire WSP plan area is located within the area identified in Board of Supervisors' Resolution No. 13-058 as being subject to circumstances, such as reduced surface water deliveries and impaired soil conditions, which limit the use of much of this land to dry farm seasonal grazing as a reasonably foreseeable use of the land.

Second, as discussed under Impact AG-1 above, Mitigation Measure AG-2 would require the implementation of a Soil Reclamation Plan for each solar project, and Mitigation Measure AG-3 would require the provision of financial assurances for implementation of the Soil Reclamation Plan.

Third, as discussed in Chapter *2. Project Description*, it is anticipated that each WSP solar project will retain permeable soil over 90 percent of its site area, which is to be vegetated with native seed mix for dry farm seasonal sheep grazing (which constitutes a reasonably foreseeable use of the land, as discussed in the first item above).

Fourth, it is anticipated that substantial evidence will be provided for each WSP solar project that confirms the project site is subject to reduced surface water availability, limitations due to groundwater quality and availability, and impaired soil conditions, such that dry farm seasonal grazing is a reasonably foreseeable use of the land. These conditions are discussed in turn below.

Surface Water Supply. The WSP plan area is dependent upon imported CVP deliveries through Westlands Water District (WWD). For a number of years, the WWD has been subject to curtailment of delivered water, ongoing drought conditions, environmental regulations, and the low priority position of the WWD, compared to other CVP contractors, in receiving its federal contract water during years of water shortage. Consequently, during the last 10 years, WWD received an average of 29 percent of its contract water, and in 2014 and 2015 WWD received 0 percent allocation of CVP water. The chronic shortages and unreliability of surface water supply results in ongoing uncertainties regarding the viability of irrigated agriculture within the WSP plan area.

Groundwater Availability. Westlands Water District is in the process of developing the sustainable yield of the subbasin through its compliance efforts under the Sustainable Groundwater

Management Act (SGMA)(see Section *3.8. Hydrology and Water Quality* for a description of SGMA). Once the sustainable yield number is determined, the yield per acre will vary somewhat throughout WWD depending on localized hydrogeology. During years when sufficient surface water supplies are available for irrigation, the crops typically grown within the WSP plan area include: cotton (which requires 2.5 acre-feet per acre per year of irrigation water), wheat, tomatoes, onions, and other field and truck crops (~1.5-2.0 af/ac/yr), and tree crops (~2.5-3.0 af/ac/yr) (WWD 2013b). The average District-wide water requirement for irrigation is approximately 2.10 af/ac/yr. Thus, during years when surface water deliveries are curtailed, groundwater pumping makes up the difference in supporting these crops. WWD reliance on groundwater in low allocation years is beyond the sustainable yield and results in progressive lowering of the water table and is not sustainable long term. (It is worth noting that reduced reliance on groundwater resulting from WSP solar development will also improve the sustainability of groundwater resources for crop production elsewhere within WWD.)

Groundwater Quality. As discussed in Section *3.2.1. Environmental Setting* above, groundwater from lower aquifer within and near the WSP plan area contains elevated concentrations of sodium, chloride, and boron, which limit the volumes of groundwater that can be applied given the limited tolerance of crops to these elements. Therefore, growing crops utilizing solely groundwater is not feasible.

Soil Conditions. Soil sampling and testing conducted on a parcel in the northeast corner of the WSP plan area in 2015 confirmed that the native soils of the site have excessive salt concentrations. All but two samples indicated salt levels in excess of 2,000 mg/L, which is considered the maximum acceptable concentration for agriculture, and several samples indicated levels that were 2 and 3 times the threshold level for crops. All samples also contained excessive levels of boron, which is toxic to plants and results in stunted growth and reduced yields (Provost & Pritchard 2014). The yields of all crops are reduced commensurate with increasing salinity, and crops with low tolerances to salinity cannot be grown. The naturally high soil salinity is increased through cyclic application and evaporation of irrigation water, which leaves precipitated salts behind. These conditions are exacerbated by high groundwater levels and poor natural drainage which results in high salt concentrations remaining in the near-surface soils. The short supply of high quality imported water limits the amount of surface water that can be applied to pre-irrigate the soil to leach out some salts. Even so, the application of imported irrigation water exacerbates the problem and can result in water logging in the root zone of crops. When groundwater levels become too high, growers must employ rotational fallowing in order to allow the accumulated saline groundwater to recede. These long term soil salinity conditions are expected to increase due to lack of a subsurface drainage system and a sustainable leachate disposal outlet.

The lab report on the parcel in the northeast corner of the WSP plan area concluded that due to severe limitation of reliable water availability and significant impairment of soil quality due to high salinity, the site is not suitable for sustaining long-term agricultural crop production, and that a reasonably foreseeable agricultural use of the site would be dry land farming with seasonal grazing (Provost & Pritchard 2014). These physical impairments to agricultural production prevail throughout the WSP plan area, as documented in the studies and ongoing monitoring discussed in Section *3.2.1. Environmental Setting*. As part of the Conditional Use Permit applications for each WSP solar project proposed on lands under Williamson Act or FMZ contracts, the project applicant would be required

by Kings County to submit evidence to confirm that these physical impairments to irrigated agriculture occur on the project site, in order to support the Williamson Act compatibility finding that a reasonably foreseeable agricultural use of the site would be dry land farming with seasonal grazing.

(3) The use will not result in the significant removal of adjacent contracted land from agricultural or open-space use.

Discussion. Each WSP solar project will be a self-contained solar generating facility that would not include electrical infrastructure with excess capacity that could be used to support similar solar generating facilities on adjacent contracted land. The two switching stations and gen-ties planned for WSP would be constructed only as needed to support incremental development of WSP solar projects over time, and would not include extra capacity (i.e., in the new gen-tie lines) that could support additional solar development in the area. Likewise, system upgrades elsewhere on the grid that may be needed to support WSP solar generation would be sized to meet project requirements only and would not include excess upgrades that might accommodate or support other solar generation in the area. WSP solar development would not result in the construction of new roadways, beyond internal maintenance driveways, that would provide new vehicular access to adjacent contracted land. Since WSP solar development would not include any excess infrastructure service capacity that could serve adjacent contracted land, it would not induce the owners of such lands to remove adjacent contracted lands from agricultural use due to newly available support facilities.

Unlike urban development, the solar generating facility would not induce other development nearby, either for the purpose of providing support services or for taking advantage of services provided by the project. Solar generating facilities neither provide nor require urban services and therefore would not attract or induce other development nearby. Moreover, such urban development would not be permitted on adjacent or nearby lands under the applicable agricultural zoning, and thus the project would not result in the removal of agricultural preserves from adjacent contracted land through urban growth inducement.

As discussed under Subsection (1) above, the low intensity of solar facility operations would generally minimize the potential for operations-related impacts to adjacent agricultural lands. Therefore, the project would not result in the removal of adjacent contracted land by way of introducing an incompatible land use to the site.

In summary, the WSP solar development would satisfy all of the Williamson Act principles of compatibility, as further defined by Resolution of the Kings County Board of Supervisors, for land use proposed on lands under Williamson Act or FSZ contracts in effect within the WSP plan area.

In summary, given the adverse physical conditions that impair irrigated agriculture throughout the WSP plan area, it is anticipated that individual solar projects proposed on lands subject to Williamson Act or FMZ contracts will satisfy the Kings County Williamson Act principles of compatibility. Upon submittal of evidence to confirm the presence of such adverse conditions on each affected WSP solar project site at the time of Conditional Use Permit issuance, and with the implementation of Mitigation Measures AG-1, AG-2, and AG-3, the potential for conflicts with the Williamson Act would be *less than significant.*

Agricultural Zoning

The majority of WSP plan area is currently zoned as "General Agriculture-40 (AG-40)," except for approximately 968 acres north of the Kansas Avenue alignment which are zoned ""Exclusive Agriculture (AX)." As provided in Article 4 of the Kings County Development Code, utility-scale photovoltaic electricity generation is a conditionally permitted use in both of these agricultural zoning districts. As such, the WSP solar projects would be consistent with the County's agricultural zoning for the site upon the granting of Conditional Use Permits for each solar project. Therefore, the impact of WSP solar development in terms of consistency with agricultural zoning would be *less-than-significant.*

Article 11, Section 1112.B.2 of the Kings County Development Code requires that the granting of Conditional Use Permits for solar photovoltaic electrical facilities shall conform to specified standards. These standards are set forth below, along with a discussion of the conformance of WSP solar development with each standard.

a. *The proposed site shall be located in an area designated as either "Very Low Priority," "Low Priority," or "Low-Medium Priority" land according to Figure RC-13 Priority Agricultural Land (2035 Kings County General Plan, Resource Conservation Element, page RC-20). "Medium Priority" land may be considered when comparable agricultural operations are integrated, the standard mitigation requirement is applied, or combination thereof.*

   Discussion. As described in Section *3.2.1. Environmental Setting*, General Plan Resource Conservation Element (Figure RC-13) shows the eastern and southeastern portions of the WSP plan area as "Low Priority" or "Very Low Priority" (51% of plan area) and the central portions of the plan area as "Low-Medium Priority" (40% of plan area), while parts of the northerly and westerly areas of the plan area are mapped "Medium Priority" (7% of plan area), with small areas near the west boundaries mapped as "Medium-High Priority" (2% of plan area). (As discussed below, all of the lands mapped "Medium Priority" are also classified as "Farmland" under the FMMP, and therefore would be subject to Mitigation Measure AG-1 requiring concomitant agricultural use of the solar facilities sites on these lands.) No portions of the WSP plan area are mapped as "High Priority" Agricultural Lands. Since the WSP solar projects located on "Medium Priority" land would be integrated with a reasonably foreseeable agriculture use on the sites, they would satisfy the finding applicable to "Medium Priority" land. As required under Mitigation Measure AG-1, above, 90 percent of the site areas would be vegetated with native grasses for dry farm seasonal sheep grazing, in accordance with the Agriculture Management Plan (AMP) to be implemented in conjunction with the projects located on "Farmland." As required under Mitigation Measures AG-2 and AG-3, above, the project proponent would be required to prepare a Soil Reclamation Plan and provide Financial Assurance, both of which would be completed and subject to County approval prior to issuance of building permits for the project.

   The 2 percent (~400 acres) in the western corner the WSP plan area that is mapped as "Medium-High Priority" Agricultural Lands under the Resource Conservation Element would be subject to this standard. However, at such future time when these lands are proposed for solar development, changes to site conditions are anticipated which would result in the removal of these lands from the "Medium-High Priority" designation. Stated differently, it is assumed that these lands would be permanently removed from irrigated agriculture, such that these lands would qualify for

redesignation to "Medium Priority" or a lower designation on the Priority Agricultural Land map of the Resource Conservation Element. Moreover, since these lands would continue in agricultural production for sheep grazing under Mitigation Measure AG-1, and would not be converted to non-agricultural use, it is unlikely that this standard would apply to the "Medium-High Priority" lands in any case. As discussed above, solar development of "Medium Priority" lands would clearly conform to the applicable zoning standard with implementation of Mitigation Measure AG-1.

b. *The proposed site shall be located within 1 mile of an existing 60 KV or higher utility electrical line. Small community commercial solar projects (less than or equal to 3 MW) may be located more than 1 mile from a 60 kV or higher transmission line subject to the following findings:*
   - The project site is located on low or very low priority farmland.
   - The project site is not restricted by a Williamson Act or Farmland Security Zone contract.
   - The project will connect to existing utility infrastructure without building new power lines.
   - The project will not result in any additional easements on agricultural land, other than access easements or easements within the public Right-of-Way.

   Discussion. An existing 70-kV sub-transmission electrical line runs in a north-south direction along the 25th Avenue alignment through the eastern portion of the WSP plan area. An existing 230-kV transmission line extends southwestward from the northern tier of sections in the WSP plan area. All but one of the WSP subareas/SGF sites shown in Figure PD-3 are located within 1 mile of one of these two transmission lines. The exception is Subarea 12 which is located at the extreme western end of the WSP plan area, at the northeast corner of Avenal Cutoff Road and Nevada Avenue. However, prior to the development of this SGF site, it is anticipated that the 230-kV "WSP-South to Gates Gen-Tie" will have been completed. Thus, at the time when a Conditional Use Permit is submitted for Subarea 12, the site will be within 1 mile of a 230-kV transmission line. In addition, the planned "WSP-North to Gates Gen-Tie" and internal gen-ties within WSP will be incrementally completed to serve all subareas. Therefore, all subareas/SGF sites within the WSP plan area would conform to the standard requiring location within 1 mile of an existing 60-kV line or higher.

c. *Agricultural mitigation shall be proposed for every acre of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance converted for a commercial solar facility. The agricultural mitigation shall preserve at a ratio of 1:1 an equal amount of agricultural acreage of equal or greater quality in a manner acceptable to the County for the life of the project. Agricultural mitigation on land designated "Medium-High" or higher priority land shall preserve an equivalent amount of agricultural acreage at a ratio of 2:1.*

   Discussion. Approximately 67 percent of the WSP plan area is mapped as Prime Farmland or Farmland of Statewide Importance under the Department of Conservation's Farmland Mapping and Monitoring Program. However, as discussed above, WSP solar development would include continued agricultural use, in the form of dry farm seasonal sheep grazing on more than 90 percent of each solar project site, concomitantly with the solar facility use, within these areas. As discussed, dry farm seasonal sheep grazing is a reasonably foreseeable agricultural use of the site under the compatibility principles of the Williamson Act, and thus would not be considered a conversion of farmland to a non-agricultural use. The Agricultural Management Plans required for each solar project within this area under Mitigation Measure AG-1, would ensure the maintenance of seasonal sheep grazing on each solar project site for life of the project. Mitigation Measures AG-2 and AG-3 would ensure that

soils of each solar project site are reclaimed to pre-project conditions upon decommissioning of the solar facility. Therefore, WSP solar development would not result in the conversion of Prime Farmland or Farmland of Statewide Importance to non-agricultural use, and no further agricultural mitigation would be required. As such, this standard is not applicable to the proposed project.

d. The project shall include a reclamation plan and financial assurance acceptable to the County that ensures the return of the land to a farmable state after completion of the project life, and retains surface water rights.

Discussion. As discussed above, Mitigation Measures AG-2 and AG-3 would require soil reclamation plans for all WSP solar projects along with financial assurance to ensure their implementation. The soil reclamation plans and financial assurance would be subject to approval by the Kings County Community Development Agency prior to the issuance of construction permits. Based on these facts, each WSP solar project would meet this standard.

e. The project shall include a pest management plan and weed abatement plan to protect adjacent farmland from nuisances and disruption.

Discussion. All WSP solar projects would prepare and implement Pest Management Plans and Weed Abatement Plans, as required under the County Development Code. The Weed Abatement Plans would specify that the approved seed mixes used to revegetate the each solar project site are free of weeds. The plans would also ensure that combustible vegetation on and near the project boundaries would be actively managed during the construction and operational phases to minimize fire risk. Vegetation height would be kept low to the ground through a combination of sheep grazing and mechanical equipment. The gravel driveways to be constructed around the project perimeters would provide fire breaks. Herbicides would be applied if warranted by site conditions as specified in the Weed Abatement Plans, but would be restricted to those considered environmentally safe. The Pest Management Plans would reduce the potential for pests to inhabit the project sites. The Pest Management Plans would set action thresholds, identify pests, specify prevention methods as a first course of action, specify control methods as a second course of action, and establish a quantitative performance goal of nuisance reduction to adjacent farmland. Rodenticide would be selected and used in a manner that minimizes impacts to protected biological species. Since each WSP solar project would be required to implement these measures under its Pest Management Plan and Weed Abatement Plan, this standard would be met for each solar project.

f. The project shall space internal access driveways per Kings County Fire Department Standards.

Discussion. As required, each WSP solar project space internal access driveways *per Kings County Fire Department Standards*. Therefore, this standard would be met for each WSP solar project.

g. The project shall include a solid waste management plan for site maintenance and disposal of trash and debris.

Discussion. For each WSP solar project, a solid waste management plan would be prepared to prescribe internal procedures for site maintenance and collection and disposal of solid waste during project construction and operation. The non-hazardous waste generated during construction and

operation would be segregated on-site for recycling or disposal at a Class III landfill. Hazardous wastes generated during project construction and operation would be either recycled or disposed of at a Class I disposal facility, as required. With the preparation and implementation of a solid waste management plan for each solar project, this standard would be met.

h. The project site shall not be located on Williamson Act or Farmland Security Zone contracted land, unless it meets the principles of compatibility under Government Code section 51238.1(a). Otherwise, the contract shall be proposed for cancellation.

Discussion. As noted above, approximately 51 percent of the WSP plan area is under Williamson Act contract or Farmland Security Zone contract, with the remaining 49 percent consisting of non-contracted lands. As discussed in detail above, the WSP solar projects on contracted lands would satisfy all of the Williamson Act principles of compatibility, as further defined by Resolution of the Kings County Board of Supervisors, for solar projects proposed on lands under Williamson Act or FSZ contracts. With the principles of compatibility satisfied for each WSP solar project on contracted lands, this standard would be met

In summary, WSP solar development would be consistent with the Kings County zoning for the WSP plan area, and would meet all of the prescribed standards required in the Kings County Development Code for the granting of Conditional Use Permits for solar generating facilities. Therefore, the impact of WSP solar development with respect to conflicts with existing zoning for agricultural use, or a Williamson Act contract would be *less than significant* with implementation of Mitigation Measures AG-1, AG-2, and AG-3.

WSP Gen-Tie Corridors

Williamson Act

Almost all of the lands traversed by the planned gen-tie lines are under Williamson Act contracts or Farmland Security Zone contracts. Under California Government Code Section 51238, electric facilities are deemed to be compatible uses within any agricultural preserve under the Williamson Act, including Farmland Security Zones. Therefore, the transmission corridors would not conflict with the Williamson Act, and the impact would be *less than significant*.

Agricultural Zoning

For utilities subject to state regulatory authority, the California Public Utilities Commission (CPUC) has primary jurisdiction over construction, operation, and maintenance of public utility facilities, including transmission lines and electrical substations. Since local governments do not have discretionary authority over public utility projects, transmission lines are exempt from local land use and zoning regulations and discretionary permit requirements (e.g., conditional use permits). However, CPUC General Order 131-D, Section III.C. requires utilities to consult with local government agencies regarding land use matters. It also requires utilities to comply with local ministerial permit requirements, including building permits, grading permits, and encroachment permits. Transmission lines and gen-ties that are privately owned and operated are not subject to CPUC jurisdiction and would require discretionary approval from the affected county.

Federally-sponsored transmission projects are largely exempt from state and local permit requirements, but must consider local regulations prior to construction (40 U.S.C. § 3312.)

Within the Kings and Fresno Counties, where the gen-tie corridors are located, almost all lands within the corridors are designated for agricultural land uses under the county general plans and zoning ordinances or development codes. At the county General Plan level, electrical transmission lines are not mentioned in the General Plans of either county (Fresno County 2000, Kings County 2010). Under the Kings County Development Code, transmission lines are subject to review by the zoning administrator (Kings County 2016). Under the Fresno County Zoning Code, privately owned and operated transmission or gen-tie lines that are not subject to CPUC's sole jurisdiction are subject to the County's unclassified conditional use permit procedures (Fresno County 2011).

In summary, transmission projects subject to state regulatory authority would be subject to the sole jurisdiction of the CPUC, and would be exempt from local discretionary land use and permit authority. However, project proponents are required by the CPUC to consult with local government agencies regarding land use matters. It is anticipated that the project proponents would coordinate with the local County administrations regarding land use matters related to the planned gen-tie projects. In the event that the gen-tie lines are to be privately constructed, both Kings and Fresno Counties would require either discretionary project approval in the form of a Conditional Use Permit, or administrative review and approval before construction could proceed. Therefore, the transmission and substation projects would not conflict with agricultural zoning requirements, and the impact in this regard would be *less than significant.*

Mitigation Measures:

***Westlands Solar Park*. Implement MMs AG-1, AG-2, and AG-3. No additional mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

Impact AG-3. Agricultural Land Use Conflicts

***Westlands Solar Park*. The WSP solar facilities would result in potential land use conflicts with nearby agricultural operations resulting from dust generation and potential introduction of invasive weed species. (*Less-than-Significant Impact*)**

***WSP Gen-Tie Corridors*. Construction of the gen-tie projects could result in lost or damaged crops, and could temporarily impede agricultural operations or access to agricultural lands and facilities. (*Less-than-Significant Impact with Mitigation*)**

This impact analysis, along with Impact AG-4 below, addresses significance criterion 'c' above.

Westlands Solar Park

The WSP plan area is largely surrounded by active agricultural operations. Non-agricultural land uses can have potentially adverse effects on existing agricultural operations; and conversely, agricultural operations can result in impacts to non-agricultural development, as discussed below.

Impacts of Solar Facilities on Agriculture

Typical urban land uses such as residential development can introduce impacts to agricultural operations resulting from trespassing, vandalism, theft of produce, air pollution, and noise from increased traffic. The potential for accidents between slow-moving farm vehicles and fast-moving cars and trucks can also increase. Proximity to urban uses can also result in restrictions on agricultural practices, such as the aerial application of seeds, fertilizers, and pesticides.

Solar generating facilities are far less sensitive than residential land uses to potential effects of neighboring agricultural operations. The operation of solar facilities involves a small number of permanent staff, who would be unlikely to trespass, vandalize, or steal crops. The very low intensity of solar operations also translates into very low traffic generation, along with negligible increases in noise or air pollution. The small increment of traffic generation would also minimize the potential for accidents between project vehicles and slow-moving farm equipment and vehicles which may occasionally travel public roadways.

Grading and construction for solar facility development would expose soils to wind erosion and increase the potential for dustfall on agricultural crops located downwind. Increased dustfall could inhibit photosynthesis and result in reduced crop yields. However, implementation of dust control measures during construction, as required for each WSP solar project under measures specified in Dust Control Permits issued by the SJVAPCD would reduce potential dust impacts to less-than-significant levels. (For a full discussion, see Section *3.3. Air Quality and Climate Change* under Impact AQ-1.)

Development of the solar facilities could also result in the introduction of invasive weed species to the area, which could interfere with nearby crops. However, the potential for invasive weed species would be minimized at each WSP solar project through the Agricultural Management Plan required for each solar project under Mitigation Measure AG-1, which requires revegetation with weed-free seed mix and weed free mulch. The introduction of weeds would be further minimized through implementation of the Weed Abatement Plan required under Article 11, Section 1112.B.2.e of the Kings County Development Code. These measures would reduce the potential impact of invasive weed species to less-than-significant levels.

In summary, the low intensity of solar facility operations would generally minimize the potential for impacts to adjacent agricultural operations. However, there would be potential for dust impacts during grading and construction, as well as the potential for introduction of invasive weed species to the area. As discussed, the implementation the required dust control and weed abatement measures would ensure that the impacts to adjacent agricultural operations would be *less than significant*.

Impacts of Existing Agricultural Operations on WSP Solar Projects

Agricultural impacts on non-agricultural uses typically include noise, dust, and pesticide drift, although the planned solar generating facilities would generally be less sensitive to such activities compared to

residential or other sensitive land uses. Most of the lands in the immediate WSP vicinity are in cultivation for row crops and tree crops. Plowing activities on the adjacent crop lands would generate dust which could be carried to the solar facilities and result in soiling of solar panels. Under prevailing winds, which blow from northwest to southeast in all but the winter months, the solar facilities could be subject to dustfall during plowing of fields adjacent to the north and northwest. However, the potential for dust generation would occur only occasionally when fields are plowed or under high wind conditions when bare soils are exposed. The WSP plan area would be subject to dustfall from plowing of fields to the south, southeast, and west only under still conditions or atypical wind conditions.

The progressive soiling of solar panels by windblown dust would result in incremental degradation of PV generating efficiency. The potential for panel soiling is taken into consideration in project planning and management of solar PV facilities, which includes regular panel washing as part of routine maintenance activities. The panel washing operations for solar facilities within the WSP are described in Chapter 2*. Project Description*, and would involve up to 4 panel washing cycles per year, or more if conditions warrant. The water demand and supply aspects of panel washing are discussed in Section *3.14. Utilities and Service Systems*.

The crop lands and orchards in the project vicinity would receive pesticide applications, but these are unlikely to occur by aerial spraying. California law prohibits pesticide application in areas where there is a possibility of contamination of people or property that is not target for application (3 CCR § 6614). In addition, the California Department of Pesticide Regulation (CDPR) requires that aerial spraying be confined to the lands intended and does not allow spraying under meteorological conditions which may result in airborne dispersal agricultural chemicals to off-site locations. It is expected that growers who are adjacent to sensitive uses would use ground application methods, in compliance with State law.

Dairy operations and other concentrated animal feeding operations are common in Kings County. The nearest dairy operation is adjacent to the southern portion of the WSP plan area on Omaha Avenue, west of SR-41. This dairy operation is downwind from most of WSP plan area, which would minimize the potential odor and dust effects on nearby WSP solar facilities. Under still or atypical wind conditions, odor and dust effects could occur at the adjacent WSP solar facilities, but these conditions would have minimal adverse effects on solar operations.

By locating solar operations in the midst of an agricultural area, proponents of solar facilities must accept a certain degree of annoyance and inconvenience associated with nearby agricultural operations. This is clearly provided for in the County's "Right-to-Farm Ordinance," described in detail in Section *3.2.2. Regulatory Context* above, which requires acknowledgement of the right of growers to conduct customary farming operations and practices without restriction.

In summary, the potential for agricultural operations to affect the WSP solar facilities would be limited to occasional dustfall due to plowing of adjacent fields, and possibly some pesticide drift due to spraying of nearby orchards. Since solar generating facilities are less sensitive to occasional dust, pesticide drift, noise, and odors than other land uses such as residential development, the potential for adverse effects to solar facilities is relatively low. The primary concern would be with windblown dust from nearby agricultural fields, which WSP solar facilities would address through regular panel washings as part of their routine operations and maintenance activities. The regular panel washing would minimize the potential reduction in solar generating efficiency resulting from panel soiling. In light of the above factors and considerations,

the potential impacts on WSP solar facilities resulting from nearby agricultural operations would be *less-than-significant*.

WSP Gen-Tie Corridors

The planned gen-tie corridors are aligned to run adjacent to existing transmission or transportation corridors. The northern gen-tie corridor would run parallel to the existing 230-kV Henrietta-Gates transmission line, and the southern gen-tie corridor would run adjacent to Nevada/Jayne Avenue. The intent of these alignments is to have transmission lines follow routes where agricultural lands have already been bisected by existing transmission or transportation corridors, in order to minimize disturbance of previously undisturbed farming operations.

Approximately 2 acres of cultivated farmlands would be permanently removed to make way for transmission monopoles. However, the tower sites would be small (about 0.02 acres each) and distributed over the 23-mile length of the transmission corridors. Therefore, the permanent impact due to lost agricultural acreage at the widely dispersed tower sites would be minor and would not have a significant adverse effect the overall viability of any farming operation. However, in areas where the transmission corridors would pass over tree tops of permanent nut and fruit crops, there is a potential that clearance requirements from conductors could result in removal of permanent tree crops in areas of the transmission easement where the conductor sag between towers is greatest.

Construction and maintenance of the gen-tie lines could temporarily impede agricultural operations or access to agricultural lands and facilities. Construction activities would include installation of towers, construction of temporary access roads, and conductor pulling and stringing. Since the gen-tie corridors pass through cultivated farmlands, the construction of transmission monopoles could result in lost crops depending on timing of construction. Construction activities and the presence of construction equipment could also temporarily interfere with agricultural operations by causing incidental damage to crops or soil, impeding access to certain farming and grazing areas, obstructing farm vehicles, or potentially disrupting irrigation and drainage systems.

Upon completion of the gen-tie lines, agricultural operations could continue within the transmission easements and around the towers, although minor adjustments to agricultural operations would likely be needed. Farming activities would require additional passes for tilling, planting, and harvesting to maneuver around the monopoles. Crop dusters would likely need to make additional passes around transmission lines and monopoles to achieve full coverage of application. However, these effects would be minimized by routing the gen-ties lines adjacent to existing transmission or roadway corridors, as planned. The overall impact of gen-tie line operation upon agricultural operations would be *less than significant*.

In summary, the gen-tie projects would potentially result in lost crops due to siting and design of monopoles and conductors. Agricultural operations would also be temporarily impaired by conflicts between schedules for transmission line construction and agricultural operations, and due to incidental damage to crops and agricultural facilities. These potential temporary and permanent affects upon agricultural operations represent *potentially significant impacts*. With implementation of Mitigation Measures AG-4 and AG-5 below, the impacts would be reduced to *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. In order to reduce the temporary and permanent impacts of the gen-tie projects on agricultural operations to less-than-significant levels, the following mitigation measures shall be implemented in conjunction with the gen-tie projects:**

MM AG-4 **Mitigation for Permanent Impacts to Agricultural Operations. The following measures shall be implemented to minimize permanent impacts to agricultural operations:**

- **During the engineering design stage, transmission monopoles shall be planned to be placed at the edges of farm fields and adjacent to existing roadways and farm lanes, to the extent feasible.**
- **During the engineering design stage, taller than typical transmission monopoles shall be planned where the gen-tie lines pass through areas of permanent tree crops, in order to provide required clearances with tree crops and thus avoid permanent removal of tree crops within the transmission easements.**

MM AG-5 **Mitigation for Temporary Impacts to Agricultural Operations. The following measures shall be implemented to minimize and mitigate temporary impacts to agricultural operations during construction:**

- **During the engineering design stage, temporary work areas, such as construction staging and materials storage areas, and stringing and pulling sites, shall be planned to be located on lands that are not under agricultural cultivation, to the extent feasible.**
- **Prior to the commencement of construction/ground disturbing activities in a given area, the project proponent shall coordinate with the affected property owners in order to schedule construction activities so as to minimize disruption to agricultural operations.**
- **During construction, activity by vehicles, equipment, and personnel shall be limited to designated work and staging areas, and designated temporary access roads, to the extent feasible.**
- **Fences, gates, and other agricultural fixtures that are damaged during construction shall be repaired or replaced to restore them to their pre-construction condition, as soon as practicable after the damage occurs.**
- **Damage to crops as a result of construction shall be compensated.**

- **Upon completion of construction in a given area, all temporary disturbance areas shall be restored to pre-construction condition. Within cultivated fields, the disturbed areas will be tilled and restored to a condition suitable for farming.**

Impact AG-4. Conversion of Adjacent Farmland to Non-Agricultural Uses

***Westlands Solar Park*. The presence of WSP solar facilities adjacent to ongoing agricultural operations would not directly or indirectly result in the conversion of these adjacent farmlands to non-agricultural uses. (*Less-than-Significant Impact*)**

***WSP Gen-Tie Corridors*. The presence of the gen-tie lines would not directly or indirectly result in the conversion of adjacent farmlands to non-agricultural uses. (*Less-than-Significant Impact*)**

This impact analysis addresses significance criterion 'c' above.

Westlands Solar Park

As discussed under 'Impact AG-3' above, the WSP solar development would result in a less-than-significant impact in terms of creating land use conflicts between agricultural operations and the WSP solar facilities. Although the solar facilities may be subject to some dustfall from plowing of adjacent fields or pesticide drift from spraying of adjacent orchards, the potential for such effects to generate complaints from solar facility operators within WSP is likely much lower than it would be from residential development. Moreover, under the County's Right-to-Farm Ordinance the project proponents will be required to acknowledge, through disclosures recorded with their property title, that they accept the effects of normal agricultural operations. Therefore, it is unlikely that the conflicts would arise between the WSP solar facility operators and adjacent agricultural operations which would undermine the viability of the agricultural operations and thereby lead to their conversion to non-agricultural uses.

In addition, most of the adjacent farmland surrounding the WSP plan area is subject to Williamson Act contracts or Farmland Security Zone contracts, under which these lands are committed to agricultural purposes for at least another 10 or 20 years, respectively, unless these contracts are non-renewed or cancelled. These lands could also be proposed for solar PV generating projects without cancellation of Williamson Act or FSZ contracts, assuming such projects would conform to the County's Williamson Act principles of compatibility. If so, these solar projects would be required to provide for concomitant agricultural production during the life of the solar facilities and full reclamation of the sites to their pre-project condition upon decommissioning.

It is unlikely that WSP solar development would induce owners of nearby lands on non-contracted lands to convert their farmlands to solar use. Each WSP solar project will be a self-contained solar generating facility that would not include electrical infrastructure with excess capacity that could be used to support similar solar generating facilities on adjacent farmland. The two switching stations and gen-ties planned for WSP would be constructed only as needed to support incremental development of WSP solar projects over time. WSP solar development would not result in the construction of new roadways, beyond internal maintenance driveways, and thus would not provide new vehicular access to adjacent contracted

land. Since WSP solar development would not include any excess infrastructure service capacity that could serve adjacent contracted land, it would not induce the owners of such lands to remove adjacent contracted lands from agricultural use by reason of excess infrastructure capacities.

Unlike urban development, the solar generating facility would not induce other development nearby, either for the purpose of providing support services or for taking advantage of services provided by the project. Solar generating facilities neither provide nor require urban services and therefore would not attract or induce other development nearby. Moreover, such urban development would not be permitted on adjacent or nearby lands under the applicable agricultural zoning, and thus the WSP solar development would not result in the conversion of adjacent farmland through urban growth inducement. (For further discussion, see Section *5.2. Growth-Inducing Effects of the Proposed Project*.)

In light of the above considerations, there is little or no potential that WSP solar development, in and of itself, would directly or indirectly result in the conversion of adjacent agricultural lands to non-agricultural uses, and therefore this impact is *less-than-significant*.

WSP Gen-Tie Corridors

As discussed under Impact AG-3, transmission lines are generally compatible with agricultural operations. Although minor adjustments to agricultural practices may be necessary in areas within and adjacent to transmission lines, the amount of agricultural land that is permanently removed from cultivation is very small and generally confined to the footprints of the transmission towers. Agricultural operations on land not directly traversed by gen-tie projects would not be subject to temporary or permanent affects that would impede or preclude continued agricultural production on those lands. Observations of existing transmission lines in the affected agricultural areas indicate that the lands within and adjacent to transmission facilities continue to be cultivated without any apparent conversion of adjacent lands to non-agricultural uses. Therefore, there is no evidence to suggest that the presence of the planned gen-tie lines, in and of themselves, would result in conversion of adjacent agricultural lands to non-agricultural uses.

The planned gen-tie lines will only provide transmission capacity to serve WSP solar development, with no transmission capacity remaining upon buildout of the Westlands Solar Park. As such, the WSP gen-tie lines would not provide transmission capacity that would facilitate additional solar development along the gen-tie route.

In summary, the WSP gen-tie lines would not directly or indirectly result in conversion of other agricultural lands in the vicinity to non-agricultural uses. Therefore, the impacts of the WSP gen-tie corridors with respect to potential conversion of adjacent agricultural lands would be *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

Cumulative Impacts

Impact AG-5. Cumulative Impacts to Agricultural Resources

***Westlands Solar Park*. The WSP solar development would not make a cumulatively considerable contribution to agricultural resource impacts, with mitigation; therefore, WSP solar development would not have a significant cumulative impact on agricultural resources, with mitigation. (*Less-than-Significant Cumulative Impact with Mitigation*)**

***WSP Gen-Tie Corridors*. The gen-tie projects would not make a cumulatively considerable contribution to agricultural resource impacts, with mitigation; therefore, the gen-tie projects would not have a significant cumulative impact on agricultural resources, with mitigation. (*Less-than-Significant Cumulative Impact with Mitigation*)**

Geographic Scope of Cumulative Impacts to Agricultural Resources

The cumulative loss of farmland is statewide in scope and impact. For purposes of this analysis, the geographic scope of the cumulative impact analysis for agricultural resources with respect to the Westlands Solar Park and the WSP Gen-Tie Corridors is Kings County and the southwestern portion of Fresno County.

Westlands Solar Park

Near-Term

Farmland Conversion

This discussion of near-term cumulative impacts considers the potential impacts of the project combined with the incremental effects of other approved, proposed and reasonably foreseeable projects in Kings County and southwestern Fresno in the near-term. The Kings County projects are listed in Table PD-9, and shown in Figure PD-9 in Chapter *2. Project Description*. The projects in southwest Fresno County are listed in Table PD-10 and shown in Figure PD-10. It is noted that all but three of the projects listed in Tables PD-9 and PD-10 comprise solar PV generating facilities. Other projects that have been proposed and approved in Kings County and the proximate area of Fresno County over the past several years have consisted almost entirely of minor projects such as cell towers or adaptive reuse projects that involve minimal or no impacts. The three exceptions include the Quay Valley project in Kings County, and the Central Valley Power Connect transmission project in Kings and Fresno counties, as well as the anticipated Westside Transmission Project in Fresno County. The Quay Valley project is a large mixed-used development on an approximately 7,500-acre site along Interstate-5 just north of the Kern County line. The Quay Valley project includes 25,000 dwelling units plus hotels, restaurants, a business park, a research park, a Hyperloop Research and Demonstration Center, and a 150 MW solar PV generating facility. The Central Valley Power Connect project involves construction of a 63-mile long 230-kV transmission line connecting the Gates Substation to the Gregg Substation located north of the City of Fresno. The anticipated Westside Transmission Project is expected to involve a 69-mile long 500-kV transmission line commencing at the Gates Substation and extending to the Dos Amigos Pumping Plant, and potentially continuing on to the Los Banos Substation. These projects are discussed further below.

Within Kings County, the majority of the pending, approved, and completed solar projects are located on lands mapped as Prime Farmlands or Farmland of Statewide Importance (i.e., "Farmland") under the California Department of Conservation's Farmland Mapping and Monitoring Program (FMMP). All of these projects are either subject to same conditions of approval as the WSP solar development with respect to maintaining agricultural activity as concomitant land use and site reclamation upon decommissioning, or are subject to conditions to mitigate for the loss of agricultural land with offsets in the form of restrictive covenants to be placed on other Farmland for the life of the solar project. Therefore, these other solar projects in Kings County would not result in permanent conversion of Farmland, either individually or collectively, and therefore would not result in a cumulatively significant impact in terms of Farmland conversion.

The Quay Valley site is entirely designated as Grazing Land on DOC's 2016 Important Farmland Map of Kings County. Under the Kings County Priority Agricultural Land Model, no portion of the Quay Valley site is designated for any type of Priority Agricultural Land (Kings County, 2010a). Therefore, it is not expected that the Quay Valley project would be subject any mitigation requirement for conversion of Farmland or Priority Agricultural Land.

The Central Valley Power Connect transmission project is in the early planning stages and alternative transmission routes had been under consideration until the project was placed on hold in late 2016. Based on the 63-mile length of the planned transmission line, it is roughly estimated that up to 32 acres of Farmland would be permanently converted at the tower locations, assuming lattice towers are selected. While the loss of this Farmland may be subject to mitigation in the form of conservation easements, the impact of the loss of this amount of Farmland would remain significant and unavoidable on a project basis.

The Westside Transmission Project is in the very early planning stages, and no preferred or alternative transmission routes have yet been formally identified. Based on the 69-mile length of the planned transmission line, it is roughly estimated that up to 35 acres of Farmland could be permanently converted at the tower locations, assuming lattice towers are selected. While the loss of this Farmland may be subject to mitigation in the form of conservation easements, the impact of the loss of this amount of Farmland would remain significant and unavoidable on a project basis.

In summary, even if there is no Farmland conversion on other lands in the study area in the near term, the conversion of Farmland at Central Valley Power Connect project and the Westside Transmission Project would result in a cumulatively significant impact with respect to Farmland conversion.

In order to evaluate whether a project would result in a cumulatively significant impact to agricultural resources, CEQA requires a determination of whether the project contribution to the significant cumulative impact would be "cumulatively considerable." If the project contribution is not cumulatively considerable, there is no significant cumulative impact associated with the project.

The WSP plan area includes agricultural lands that are either cultivated for row crops or used for grazing. Approximately 67 percent of lands within WSP are mapped as Prime Farmlands or Farmlands of Statewide Importance (i.e., "Farmland") under the California Department of Conservation's Farmland Mapping and Monitoring Program (FMMP). All of these lands are under Williamson Act or Farmland Security Zone contracts. As discussed under MM AG-1, the WSP solar projects planned on "Farmland" would be required to incorporate dry-land farming with sheep grazing as part of their operations in order

to maintain agricultural production on each SGF site during the life of solar generation activity. At the end of their productive lives, all WSP solar facilities would be decommissioned and reclaimed to return the sites to their pre-project conditions in accordance with MM AG-2 and MM AG-3. As such, none of the WSP solar projects would result in the permanent conversion of farmland to non-agricultural uses. Further, none of the WSP solar projects would otherwise result in the conversion of Farmland to non-agricultural use. As such, the collective contribution from the WSP solar projects to the cumulatively significant impacts to agricultural resources *would not be cumulatively considerable*. As such, the impact of WSP solar development in terms of conversion of Farmland to non-agricultural uses would be *cumulatively less than significant* in the near term.

Conflicts with Agricultural Zoning and Williamson Act

Almost all of the cumulative solar project sites, including the WSP plan area, are located in agricultural zoning districts or other zoning districts that permit solar generating facilities as a conditionally permitted use (as mentioned, the exception is the Quay Valley project). In Kings County, the cumulative projects on agriculturally zoned land would be required to satisfy the applicable County Development Code findings for conditional use permits, and lands under Williamson Act contract would be required to meet the compatibility findings, or initiate contract cancellation. The Quay Valley project is expected to be consistent with applicable zoning upon approval of amendments to the General Plan and Development Code that would permit that project to proceed. In Fresno County, the cumulative projects would also be consistent with applicable zoning. Therefore, none of the cumulative projects would conflict with applicable agricultural zoning. As such, there would be no cumulative impact in terms of land use plans, policies, and regulations, and the project would make *no contribution* to such a cumulative impact.

Most of the cumulative projects, including approximately 51 percent of the WSP plan area, are subject to either Land Conservation contracts or Farmland Security Zone contracts under the Williamson Act. Some of these projects would initiate contract cancellation proceedings, and other projects including the applicable WSP solar projects, would meet State and County principles of Williamson Act compatibility to enable solar generating facilities to occupy the contracted lands. The cumulative projects that elect to pursue the compatibility options would maintain sufficient on-site agricultural productivity in order to meet the State and County principles of compatibility under the Williamson Act, as a requirement of Conditional Use Permit approval by Kings County. Therefore, these projects are anticipated to maintain active Land Conservation or Farmland Security Zone contracts for the life of the solar projects without conflicting with the Williamson Act. In summary, none of the cumulative projects, including the WSP solar projects, would individually result in significant impacts in terms of conflicting with the Williamson Act. As such, the impact associated with WSP solar development in terms of conflicts with the Williamson Act would be *cumulatively less than significant*.

Potential Conflicts with Adjacent Agricultural Uses

Regarding potential conflicts with agriculture, the solar projects would be generally compatible with agricultural use and would not substantially impair the use of agricultural land, as discussed under Impact AG-3 above. The construction of the transmission lines may involve temporary impacts to agricultural operations in the immediate vicinity, but these impacts would be mitigated through implementation of measures such as those specified in MM AG-5 above, which would be implemented for both the WSP gen-tie projects and the CVPC transmission project. The Quay Valley project may involve potential conflicts with adjacent agricultural uses, but these are expected to be mitigated through conditions of approval by Kings

County. In summary, the cumulative projects, including the WSP solar development, are not anticipated to result in conflicts with adjacent agricultural uses, on an individual project basis or cumulatively. Therefore, the potential impacts to adjacent agricultural uses associated with WSP solar development would be *cumulatively less than significant*.

Potential Conversion of Adjacent Farmland to Non-Agricultural Use

As discussed under Impact AG-4 above, solar development requires very little supporting infrastructure that could support further development of adjacent lands with solar or other non-agricultural uses. However, the construction of the CVPC transmission project could include surplus capacity that could support additional solar development in western Fresno and Kings counties. However, as discussed throughout this section, solar projects in Fresno and Kings counties would be subject to strict requirements for site restoration upon decommissioning, such that permanent conversion of Farmland would be avoided. The Quay Valley project could include surplus service capacity to support additional urban development on adjacent lands. However, given the rigorous discretionary approval process required for such master planned projects in Kings County, it is unlikely that unplanned additional development outside the boundaries of the Quay Valley project would be permitted by the County. In summary, there is little or no potential for the cumulative projects, including the WSP solar development, to result in potential conversion of adjacent Farmland to non-agricultural uses, either on an individual project basis or cumulatively. Therefore, the potential impacts associated with WSP solar development, in terms of conversion of adjacent Farmland to non-agricultural uses, would be *cumulatively less than significant*.

Conclusion

In summary, the residual effects from the collective operations of the cumulative projects upon Farmland would be cumulatively significant in the near term; however, the incremental contribution from WSP solar development to the cumulatively significant impacts to Farmland in the near term *would not be cumulatively considerable with mitigation*. With respect to other agricultural resource impacts, the cumulative impacts would be *less than significant*. Therefore, the overall impact of WSP solar development upon agricultural resources in the near term would be c*umulatively less than significant with mitigation*.

Far Term

For purposes of the far-term cumulative analysis, the buildout of the designated urban land uses under the Kings County and Fresno County General Plans, as well as buildout under the General Plans of incorporated cities within Kings County and southwestern Fresno County, serves to define the nature and location of cumulative land uses anticipated under far-term conditions.

The General Plans provide for the orderly growth of the urbanized areas of Kings County and southwestern Fresno County over the far term. Given that most the land around these urbanized areas consists of "Farmland," this growth under the General Plans would result in the permanent conversion of agricultural land to urban uses. To minimize the impact to agricultural resources, the counties and the incorporated cities have implemented effective growth controls to prevent sprawl and avoid premature conversion of agricultural land, and have also instituted off-site mitigation requirements in the form of mitigation fees or permanent conservation easements. While this would constitute feasible mitigation at the project level under CEQA, the impact from the permanent conversion of farmland cannot be fully mitigated and would remain significant and unavoidable, on both a project and cumulative basis.

It is expected that additional solar development projects, not currently proposed or foreseen, would be constructed over the far term. While most of these solar projects would likely be developed with concomitant agriculture production to meet Williamson Act compatibility principles, there is a potential that some of these solar projects would be developed on "Farmland" that is not under Williamson Act or FSZ contract and therefore may be mitigated through other means such as restrictive covenants (preferred in Kings County) or offsite conservation easements (outside of Kings County). Both of these mechanisms would ensure continued agricultural cultivation on other lands in the County that are of equivalent size and quality to the lands on the solar project site. Conservation easements are typically acquired in perpetuity, while the use of restrictive covenants allows for the termination of the covenants after the solar project site is reclaimed and returned to a condition suitable for agriculture. Since such compensatory mitigation would not provide full mitigation for agricultural conversion (including temporary conversion during the life of the solar project), any such projects would contribute to the significant cumulative impact to farmlands. Therefore, it is concluded that cumulative impacts to agricultural resources in the study area in the far term would be significant and unavoidable.

As discussed under "Near Term" above, the WSP solar development, as mitigated, would avoid conversion of "Farmland" both during the life of the solar facilities and upon decommissioning. Therefore, the contribution of WSP solar development to the cumulative impact would be *not cumulatively considerable with mitigation*, and as such the impact to Farmland resulting from WSP solar development in the far term would be *cumulatively less than significant with mitigation*.

Regarding other impacts to agricultural resources, as discussed under "Near-Term," such as conflicts with agricultural zoning, conflicts with adjacent agricultural operations, and potential conversion of adjacent Farmland, these potential impacts are expected to be less-than-significant for the same reasons discussed for near-term conditions above. Therefore, the potential impacts associated with WSP solar development with respect to these issues would be *cumulatively less than significant* in the far term.

In summary, potential impacts to agricultural resources associated with WSP solar development in the far term would be *cumulatively less than significant with mitigation*.

WSP Gen-Tie Corridors

Near-Term

This discussion of near-term cumulative impacts considers the potential impacts of the project combined with the incremental effects of other approved, proposed and reasonably foreseeable projects in the western parts of Kings and Fresno counties in the near-term. These cumulative projects are listed in Table PD-10 and shown in Figure PD-10 in Chapter *2. Project Description*.

Farmland Conversion

As discussed above for the Westlands Solar Park, most of the approved and pending projects in the study area consist of solar PV development, some of which are located on Farmland. As with other solar projects in the study area, it is expected that approval of these projects by Kings and Fresno County will be conditioned upon a requirement for site reclamation upon decommissioning of the solar facilities. Thus permanent loss of Farmland at these project sites would be avoided and the impact in terms of Farmland

conversion would be less than significant, on both an individual project basis and cumulatively. However, as discussed, it is likely that Farmland conversion impacts associated with the CVPC and Westside transmission projects would not be mitigated to less than significant levels, which would result in a cumulatively significant impact to Farmland in the study area.

With respect to the WSP Gen-Tie Corridors, almost all of the lands traversed by the gen-tie corridors are mapped as "Farmland" under the FMMP. As discussed under Impact AG-1, the gen-tie monopoles would collectively result in the removal of less than 2 acres of Farmland, which would be dispersed over 23 miles of gen-tie corridor. This would represent a very small amount of Farmland, and therefore the project impact to Farmland would be less than significant at the project level.

In order to evaluate whether the project would result in a cumulatively significant impact to agricultural resources, CEQA requires a determination of whether the project contribution to the significant cumulative impact would be "cumulatively considerable." If the project contribution is not cumulatively considerable, there is no significant cumulative impact associated with the project. For the WSP Gen-Tie Corridors, the conversion of less than 2 acres of Farmland over the entire project would be *not cumulatively considerable*. Therefore, the near-term impact associated with the WSP gen-tie projects, in terms of Farmland conversion, would be *cumulatively less than significant*.

Potential Conflicts with Adjacent Agricultural Uses

Regarding potential conflicts with agricultural operations, the WSP gen-tie projects would be generally compatible with agricultural use and would not substantially impair the use of agricultural land, as discussed under Impact AG-3 above. Impacts to agricultural operations would be minimized by routing the gen-tie lines adjacent to existing transmission lines or transportation corridors, as planned, and by implementation of MM AG-4, which requires the placement of transmission towers at the edges of cultivated fields where feasible, and avoidance of removal of tree crops beneath conductors, and the restoration of temporary disturbance sites to pre-construction conditions; and MM AG-5 which requires avoidance and mitigation of temporary construction impacts to agricultural operations. Cultivation would continue within the gen-tie corridors, so overall effects on agricultural operations would be minor. Therefore, impacts to agricultural operations resulting from the WSP gen-tie projects would be less than significant with mitigation. It is expected that the other cumulative transmission projects would be required to incorporate similar measures to minimize impacts to agricultural operations, and the one cumulative solar project would not result in significant impacts to adjacent agricultural operations. Therefore, the impact associated with the WSP gen-tie projects, in terms of potential conflicts with adjacent agricultural uses, would be *cumulatively less than significant with mitigation* in the near term.

Conflicts with Agricultural Zoning and Williamson Act

In terms of agricultural zoning, electrical transmission lines and substations operated by public utilities are under the sole jurisdiction of the CPUC and/or federal regulatory agency, as applicable, and are exempt from local planning policy and zoning regulations. Privately owned and operated transmission lines and gen-ties are generally permitted uses in agricultural zones, subject to permitting by the affected County. Therefore, the transmission corridors would not conflict with the local agricultural zoning, and the impact would be less than significant. As discussed for the Westlands Solar Park, the cumulative impact from other approved and pending projects in the study area, in terms of conflicts with agricultural zoning would be less

than significant, and this would also be the case in the context of the gen-tie projects. Therefore, the impact associated with the WSP gen-tie projects, in terms of conflicts with agricultural zoning, would be *cumulatively less than significant* in the near term.

With respect to lands under Williamson Act and FSZ contracts, transmission lines are considered to be compatible uses under state law. Therefore, the WSP gen-tie projects would not conflict with the Williamson Act, and the impact would be less than significant. As discussed for the Westlands Solar Park, the cumulative impact from other approved and pending projects in the study area, in terms of conflicts with the Williamson Act, would be less than significant, and this would also be the case in the context of the gen-tie projects. Therefore, the impact associated with the WSP gen-tie projects, in terms of conflicts with the Williamson Act, would be *cumulatively less than significant* in the near term.

Potential Conversion of Adjacent Farmland to Non-Agricultural Use

Regarding the potential to result in conversion of adjacent Farmland, there is little or no potential that the WSP gen-tie projects would directly or indirectly result in the conversion of adjacent agricultural lands to non-agricultural uses, as discussed under Impact AG-4. Therefore, the potential project-level impact would be less than significant. As discussed under "Westlands Solar Park," the cumulative impact from other approved and pending projects in the study area, in terms of potential to result in conversion of adjacent Farmland, would be less than significant, and this would also be the case for the gen-tie projects. Therefore, the impact associated with the WSP gen-tie projects, in terms of potential to result in conversion of adjacent Farmland, would be *cumulatively less than significant* in the near term.

Conclusion

In summary, the residual effects of the cumulative projects upon Farmland would be cumulatively significant in the near term; however, the incremental contribution from WSP gen-tie projects to the cumulatively significant impacts to Farmland in the near term *would not be cumulatively considerable*. With respect to other agricultural resource impacts, such as conflicts with agricultural zoning, and potential conversion of adjacent Farmland, the cumulative impacts would be *less than significant*. With respect to conflicts with adjacent agricultural operations, the cumulative impacts would be *less than significant with mitigation*. Therefore, the overall impact of WSP gen-tie projects upon agricultural resources in the near term would be c*umulatively less than significant with mitigation*.

Far Term

For purposes of the far-term cumulative analysis, the buildout of the designated urban land uses and transportation networks in Kings County and southwestern Fresno County, as well as buildout of incorporated cities within those areas, as set forth in the respective General Plans, serves to define the nature and location of cumulative land uses anticipated under far-term conditions. The development planned for these areas in the study area would result in cumulatively significant impacts to Farmland in the far term, given that such conversions could not be feasibly mitigated to less than significant levels, and therefore would remain cumulatively significant and unavoidable.

As discussed under "Near Term" above, the WSP gen-tie projects would result in a very small area of Farmland conversion (less than 2 acres over 23 miles), which would represent a less-than-significant impact

to Farmland at the project level. Similarly, the contribution of the WSP gen-tie projects to the cumulative impact would be *not cumulatively considerable*, and as such the impact to Farmland resulting from the WSP gen-tie projects in the far term would be *cumulatively less than significant*.

Regarding other impacts to agricultural resources, such as conflicts with agricultural zoning, and potential conversion of adjacent Farmland, these potential impacts would be *less-than-significant* for the same reasons discussed for near-term conditions above. Regarding conflicts with adjacent agricultural operations, the cumulative impacts would be *less than significant with mitigation.* Therefore, the potential impacts associated with the WSP gen-tie projects with respect to agricultural resources in the far term would be *less than significant* with mitigation.

Mitigation Measures:

***Westlands Solar Park*. Implement MMs AG-1, AG-2, and AG-3. No additional mitigation is required.**

***WSP Gen-Tie Corridors*. Implement MMs AG-4, and AG-5. No additional mitigation is required.**

REFERENCES/BIBLIOGRAPHY – AGRICULTURAL RESOURCES

CDOC 2015a — California Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program (FMMP). 2015. *Fresno County Important Farmland 2014– Sheet 1 of 2 (West)*. December. ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2014/fre14_w.pdf

CDOC 2015e — California Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program (FMMP). 2015. *Kings County 2012-2014 Land Use Conversion*. October. http://www.conservation.ca.gov/dlrp/fmmp/Pages/Kings.aspx

CDOC 2017 — California Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program (FMMP). 2017. *Kings County Important Farmland 2016*. June. ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2016/kin16.pdf

Cody *et al.* 2009 — Cody, Betsy A., Peter Folger, and Cynthia Brougher. 2009. *California Drought: Hydrological and Regulatory Water Supply Issues*. Congressional Research Service. December 7, 2009. www.fas.org/sgp/crs/misc/R40979.pdf

CDPR 2006 — California Department of Pesticide Regulation. 2006. *Pest Control Aircraft Pilot Study Guide*. June.

http://www.cdpr.ca.gov/docs/license/pubs/pcap_cert_study_guide.pdf

DWR 2012 — California Department of Water Resources. 2012. *Lemoore/Corcoran Sub Area – Areas of Shallow Groundwater, 2012 (Map)*. http://www.water.ca.gov/drainage/images/sgw/lemoorecorc/lemo_d12.pdf

DWR 2016 — California Department of Water Resources. 2016. *California Data Exchange Center – Cal Aqueduct Check 21*. March. http://cdec.water.ca.gov/jspplot/jspPlotServlet.jsp?sensor_no=10422&end=3%2F10%2F2016+16%3A46&geom=huge&interval=365&cookies=cdec01

Esajian 2011 — Esajian, Gary, General Manager, Esajian Farming Company. *Personal Communications*. Various Dates in 2011.

FAO n.d. — Food and Agriculture Organization of the United Nations (FAO). No Date. *Agricultural Drainage Water Management in Arid and Semi-Arid Areas. FOA Irrigation and Drainage Paper 61*. ftp://ftp.fao.org/docrep/fao/005/y4263e/y4263e11.pdf

Fresno County 2000 — Fresno County. 2000. *Fresno County General Plan*. October. http://www2.co.fresno.ca.us/4510/4360/General_Plan/GP_Final_policy_doc/Table_of_Contents_rj_blue.pdf

Fresno County 2011 — Fresno County. 2011. *The Ordinance Code of the County of Fresno. Part VII – Land Use Regulation and Planning. Division VI - Zoning*. December. http://www.co.fresno.ca.us/ViewDocument.aspx?id=53760

Kings County 1964 — Kings County. 1964. *Zoning Plan – County of Kings California*. Adopted April 7, 1964. http://www.kingscountygis.com/maps/

Kings County 2002 — Kings County. 2002. *Kings County Right to Farm Ordinance Form*. Adopted by Ordinance No. 608, effective March 5, 2002. http://www.countyofkings.com/home/showdocument?id=4012

Kings County 2010a — Kings County. 2010. *2035 Kings County General Plan*. Adopted January 26, 2010. http://www.countyofkings.com/home/showdocument?id=3106

Kings County 2013 — Kings County. 2013. *Kings County Agricultural Preserves 2013 – Williamson Act and Farmland Security Zone Properties (Map)*. October 8. http://www.countyofkings.com/home/showdocument?id=3168

Kings County 2013b — Kings County Community Development Agency. 2013. *County of Kings Implementation Procedures for the California Land Conservation "Williamson" Act of 1965, including Farmland Security Zones*. As updated November 27, 2013. http://www.countyofkings.com/home/showdocument?id=3166

Kings County 2015a — Kings County Department of Agriculture. 2015. *Kings County 2014 Agricultural Crop Report*. June 2015. http://countyofkings.com/home/showdocument?id=9262

Kings County 2015b — Kings County Community Development Agency. 2015. *Initial Study and Mitigated Negative Declaration – Westside Solar Project (CUP 14-01)*. March. http://www.countyofkings.com/home/showdocument?id=9152

Kings County 2016 — Kings County. 2016. *Kings County Development Code. Kings County Code of Ordinances, Appendix A - Ordinance No. 668.12*. Dated January 26, 2016; Effective February 26, 2016. http://www.countyofkings.com/home/showdocument?id=12535

NRCS 1986 — U.S. Department of Agriculture, Natural Resources Conservation Service. 1986. *Soil Survey of Kings County California*. September. http://www.nrcs.usda.gov/Internet/FSE_MANUSCRIPTS/california/CA031/0/kings.pdf

NRCS 2006 — U.S. Department of Agriculture (USDA), Natural Resources Conservation Service. 2006. *Soil Survey of Fresno County California, Western Part*. November. http://www.nrcs.usda.gov/Internet/FSE_MANUSCRIPTS/california/CA653/0/fresno.pdf

NRCS 2011 — U.S. Department of Agriculture (USDA), Natural Resources Conservation Service. 2011. *Assessing Water Quality for Human Consumption, Agriculture, and Aquatic Life Uses; Environmental Technical Note No. MT-1 (Rev. 2).* June. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs144p2_051302.pdf

OEHHA 2010 — California Office of Environmental Health Hazard Assessment. 2010. *Announcement of Publication of Final Public Health Goal for Selenium in Drinking Water*. December 10, 2010. http://oehha.ca.gov/water/phg/121010phg.html

Presser 2008 — Presser, Theresa S. and S.E. Schwarzbach. 2008. *Technical Analysis of In-Valley Drainage Management Strategies for the Western San Joaquin Valley, California*. U.S. Geological Survey, Open-File Report 2008-1210. http://pubs.usgs.gov/of/2008/1210/

Provost/Pritchard 2014 — Provost & Pritchard Consulting Group and Dellavalle Laboratory, Inc. 2014. *Soil & Water Analysis Report for Westside Assets Solar Project*. August. Available at http://www.countyofkings.com/home/showdocument?id=9152

SB 618 — Senate Bill 618. 2011. *California Government Code, Title 5, Division 1, Part 1, Chapter 6.9. Solar-Use Easement*. Approved by Governor Brown on November 8, 2011; effective January 1, 2012. http://www.leginfo.ca.gov/pub/11-12/bill/sen/sb_0601-0650/sb_618_bill_20111008_chaptered.html

Shannon 2011 — Shannon, Mark, Former General Manager, Shamrock Farms. *Personal Communications*. Various Dates in 2011.

UCD 2012 — UC Davis, Center for Watershed Sciences (UCD). 2012. *Addressing Nitrate in California's Drinking Water – With Focus on Tulare Lake Basin and Salinas Valley Groundwater*. Report for the State Water Resources Control Board Report to the Legislature. California Nitrate Project, Implementation of Senate Bill X2 1. January. http://groundwaternitrate.ucdavis.edu/

USBR 2006 — U.S. Bureau of Reclamation. 2006. *San Luis Drainage Feature Re-Evaluation – Final EIS*. June 8. http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=61

USBR 2007 — U.S. Bureau of Reclamation. 2007. *San Luis Drainage Feature Re-Evaluation – Record of Decision (ROD)*. March 7, 2007. http://www.usbr.gov/mp/sccao/sld/docs/sld_feature_reeval_rod.pdf

USBR 2015 — U.S. Bureau of Reclamation. 2015. *Westlands v. United States Settlement*. October. http://wwd.ca.gov/wp-content/uploads/2015/10/westlands-vs-united-states-settlement.pdf

USDA 2014 — U.S. Department of Agriculture (USDA), National Agricultural Statistics Service. 2014. *USDA 2012 Census of Agriculture, Volume 1, Chapter 1: U.S. National Level Data*. May. http://www.agcensus.usda.gov/Publications/2012/Full_Report/Volume_1,_Chapter_1_US/st99_1_001_001.pdf

USDA 2015 — U.S. Department of Agriculture (USDA), National Agricultural Statistics Service. 2015. *2012 Census of Agriculture – County Profile – Kings County*, California. http://www.agcensus.usda.gov/Publications/2012/Online_Resources/County_Profiles/California/cp06031.pdf

WWD 2006 — Westlands Water District (WWD). 2006. Generalized Depth of Shallow Groundwater Surface (Map). April. http://wwd.ca.gov/wp-content/uploads/2015/07/April-20061.pdf

WWD 2013 — Westlands Water District (WWD). 2013. *Water Management Plan – 2012*. April. http://wwd.ca.gov/wp-content/uploads/2015/09/water-management-plan-2012.pdf

WWD 2015a — Westlands Water District (WWD). 2015. *Deep Groundwater Conditions Report*. March. http://wwd.ca.gov/wp-content/uploads/2015/04/2014-deep-groundwater-conditions-report.pdf

WWD 2015b — Westlands Water District (WWD). 2015. *Generalized Depth of Shallow Groundwater Surface (Map)*. April. http://wwd.ca.gov/wp-content/uploads/2015/08/gdsgs-april-2015.pdf

WWD 2017 — Westlands Water District (WWD). 2017. *Annual Water Use and Supply*. WWD Website. http://wwd.ca.gov/water-management/water-supply/annual-water-use-and-supply/

3.3. AIR QUALITY AND CLIMATE CHANGE

The following discussion is based on the Air Quality Assessment prepared for the project by Illingworth & Rodkin in September 2017, which is incorporated into this EIR by reference, as provided under CEQA Guidelines Section 15150. The air quality report is contained in Appendix C of this EIR, and its findings are summarized below.

3.3.1. ENVIRONMENTAL AND REGULATORY SETTING

Westlands Solar Park and Transmission Corridors

Air Basin Characteristics

Topography

The WSP and transmission corridors are located in the southwestern portion of the San Joaquin Valley Air Basin. The Valley is surrounded on three sides by topographic features that restrict air movement through and out of the basin and, as a result, impede the dispersion of air pollutants from the basin. The flow is further restricted vertically by inversion layers that are common in the San Joaquin Valley air basin throughout the year. An inversion layer is created when a mass of warm dry air sits over cooler air near the ground, preventing vertical dispersion of pollutants from the air mass below. These inversions lead to a buildup of ozone and ozone precursor pollutants.

Climate

The climate of the WSP area is characterized by hot dry summers and cool, mild winters. Daytime temperatures in the summer often approach or exceed 100 degrees, with lows in the 60s. In the winter, daytime temperatures are usually in the 50s, with lows around 35 degrees. Radiation fog is common in the winter, and may persist for days. Winds are predominantly up-valley (flowing from the north) in all seasons, but more so in the summer and spring months. This type of flow is usually trapped below marine and subsidence inversions, restricting outflow through the Sierra Nevada and Tehachapi Mountains.

The pollution potential of the San Joaquin Valley is very high. The San Joaquin Valley has one of the most severe air pollution problems in the State and the nation. Surrounding elevated terrain in conjunction with temperature inversions frequently restrict lateral and vertical dilution of pollutants. Abundant sunshine and warm temperatures in late spring, summer, and early fall are ideal conditions for the formation of ozone, where the Valley frequently experiences unhealthy air pollution days. Low wind speeds, combined with low inversion layers in the winter, create a climate conducive to high respirable particulate matter (PM_{10}) concentrations and elevated carbon monoxide (CO) levels.

Air Quality Regulations and Standards

The Federal and California Clean Air Acts have established ambient air quality standards for different pollutants. National ambient air quality standards (NAAQS) were established by the Federal Clean Air Act of 1970 (amended in 1977 and 1990) for six "criteria" pollutants. These criteria pollutants now include carbon monoxide (CO), ozone (O_3), nitrogen dioxide (NO_2), respirable particulate matter with a diameter less than 10 microns (PM_{10}), sulfur dioxide ($S0_2$), and lead (Pb). In 1997, the United States Environmental Protection Agency (US EPA) added fine particulate matter ($PM_{2.5}$) as a criteria pollutant. The air pollutants for which standards have been established are considered the most prevalent air pollutants that are known to be hazardous to human health. California ambient air quality standards (CAAQS) include the NAAQS pollutants and also hydrogen sulfide, sulfates, vinyl chloride, and visibility reducing particles. These additional CAAQS pollutants tend to have unique sources and are not typically examined in environmental air quality assessments. In addition, lead concentrations have decreased dramatically since it was removed from motor vehicle fuels.

Federal Regulations

At the federal level, the US EPA administers and enforces air quality regulations. Federal air quality regulations were developed primarily from implementation of the Federal Clean Air Act. If an area does not meet NAAQS over a set period (three years), EPA designates it as a "nonattainment" area for that particular pollutant. EPA requires states that have areas that do not comply with the national standards to prepare and submit air quality plans showing how the standards would be met. If the states cannot show how the standards would be met, then they must show progress toward meeting the standards. These plans are referred to as the State Implementation Plan (SIP). Under severe cases, EPA may impose a federal plan to make progress in meeting the federal standards.

The US EPA also has programs for identifying and regulating hazardous air pollutants. The Clean Air Act requires US EPA to set standards for these pollutants and sharply reduce emissions of controlled chemicals. Industries were classified as major sources if they emitted certain amounts of hazardous air pollutants. The US EPA also sets standards to control emissions of hazardous air pollutants through mobile source control programs. These include programs that reformulated gasoline, national low emissions vehicle standards, Tier 2 motor vehicle emission standards, gasoline sulfur control requirements, and heavy-duty engine standards.

The San Joaquin Valley Air Basin is subject to major air quality planning programs required by the federal Clean Air Act (CAA) to address ozone, particulate matter air pollution, and carbon monoxide. The CAA requires that regional planning and air pollution control agencies prepare a regional Air Quality Plan to outline the measures by which both stationary and mobile sources of pollutants can be controlled in order to achieve all standards within the deadlines specified in the Clean Air Act. These plans are submitted to the State, which after approval, submits them to US EPA as the State Implementation Plan (SIP).

State Regulations

The California Clean Air Act of 1988, amended in 1992, outlines a program for areas in the State to attain the CAAQS by the earliest practical date. The California Air Resources Board (CARB) is the state air pollution control agency and is a part of the California EPA. The California Clean Air Act (CCAA) sets more stringent air quality standards for all of the pollutants covered under national standards, and

additionally regulates levels of vinyl chloride, hydrogen sulfide, sulfates, and visibility-reducing particulates. If an area does not meet CAAQS, CARB designates the area as a nonattainment area. The San Joaquin Valley Air Basin does not meet the CAAQS for ozone, PM_{10}, and $PM_{2.5}$. CARB requires regions that do not meet CAAQS for ozone to submit clean air plans that describe plans to attain the standard or show progress toward attainment.

In addition to the US EPA, CARB further regulates the amount of air pollutants that can be emitted by new motor vehicles sold in California. Motor vehicle emissions standards have always been more stringent than federal standards since they were first imposed in 1961. CARB has also developed Inspection and Maintenance (I/M) and "Smog Check" programs with the California Bureau of Automotive Repair. Inspection programs for trucks and buses have also been implemented. CARB also sets standards for motor vehicle fuels sold in California.

San Joaquin Valley

The San Joaquin Valley Air Pollution Control District (SJVAPCD) is made up of eight counties in California's Central Valley: San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, Tulare, and the San Joaquin Valley portion of Kern County. The primary role of the SJVAPCD is to develop plans and implement control measures in the San Joaquin Valley to control air pollution. These controls primarily affect stationary sources such as industry and power plants. Rules and regulations have been developed by SJVAPCD to control air pollution from a wide range of air pollution sources. In March 2007, an Indirect Source Review (ISR) rule was adopted that controls air pollution from new land development projects. SJVAPCD also conducts public education and outreach efforts such as the Spare the Air, Wood Burning, and Smoking Vehicle voluntary programs.

National and State Ambient Air Quality Standards

The CAA and CCAA promulgate, respectively, national and state ambient air quality standards. Air quality standards have been established by US EPA (i.e., NAAQS) and California (i.e., CAAQS) for specific air pollutants most pervasive in urban environments. The NAAQS and CAAQS are shown in Table AQ-1. Ambient standards specify the concentration of pollutants to which the public may be exposed without adverse health effects. Individuals vary widely in their sensitivity to air pollutants, and standards are set to protect more pollution-sensitive populations (e.g., children and the elderly). National and state standards are reviewed and updated periodically based on new health studies. California ambient standards tend to be at least as protective as national ambient standards and are often more stringent. For planning purposes, regions like the San Joaquin Valley Air Basin are given an air quality status designation by the federal and state regulatory agencies. Areas with monitored pollutant concentrations that are lower than ambient air quality standards are designated "attainment" on a pollutant-by-pollutant basis. When monitored concentrations exceed ambient standards within an air basin, it is designated "nonattainment" for that pollutant. US EPA designates areas as "unclassified" when insufficient data are available to determine the attainment status; however, these areas are typically considered to be in attainment of the standard.

TABLE AQ-1
AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards Concentration	National Standards Concentration
Ozone	1-hour	0.09 ppm (180 µg/m^3)	—
	8-hour	0.070 ppm (137 µg/m^3)	0.070 ppm (137 µg/m^3) (3-year average of annual 4th highest daily maxima)
Carbon Monoxide	8-hour	9.0 ppm (10,000 µg/m^3)	9 ppm (10,000 µg/m^3)
	1-hour	20 ppm (23,000 µg/m^3)	35 ppm (40,000 µg/m^3)
Nitrogen dioxide	Annual Average	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)
	1-hour	0.18 ppm (339 µg/m^3)	0.100 ppm (188 µg/m^3) (3-year average of annual 98th percentile daily maxima)
Sulfur dioxide	Annual	-	Not applicable in SJV
	24-hour	0.04 ppm (105 µg/m^3)	Not applicable in SJV
	3-hour	—	0.5 ppm (1,300 µg/m^3)
	1-hour	0.25 ppm (655 µg/m^3)	0.075 ppm (196 µg/m^3) (3-year average of annual 99th percentile daily maxima)
Respirable particulate matter (10 micron)	24-hour	50 µg/m^3	150 µg/m^3
	Annual Arithmetic Mean	20 µg/m^3	—
Fine particulate matter (2.5 micron)	Annual Arithmetic Mean	12 µg/m^3	12.0 µg/m^3 (3-year average)
	24-hour	—	35 µg/m^3 (3-year average of annual 98th percentile daily concentrations)
Sulfates	24-hour	25 µg/m^3	—
Lead	30-day	1.5 µg/m^3	—
	3 Month Rolling Average	—	0.15 µg/m^3

Source: CARB 2016.
SO_2 Federal 24 hour and annual standards are not applicable in the SJVAPCD.
µg/m^3 = micrograms per cubic meter
ppm = parts per million

Criteria Air Pollutants and their Health Effects

The primary criteria air pollutants that would be emitted by the WSP projects include ozone (O_3) precursors (NO_x and ROG), carbon monoxide (CO), and suspended particulate matter (PM_{10} and $PM_{2.5}$). Other criteria pollutants, such as lead (Pb) and sulfur dioxide (SO_2), would not be substantially emitted by the WSP projects or traffic, and air quality standards for them are being met throughout the San Joaquin Valley Air Basin.

Ozone (O_3)

While O_3 serves a beneficial purpose in the upper atmosphere (stratosphere) by reducing ultraviolet radiation potentially harmful to humans, when it reaches elevated concentrations in the lower atmosphere it can be harmful to the human respiratory system and to sensitive species of plants. O_3 concentrations build to peak levels during periods of light winds, bright sunshine, and high temperatures. Research has shown that exposure to ozone damages the alveoli (the individual air sacs in the lung where the exchange of oxygen and carbon dioxide between the air and blood takes place). Ozone is a strong irritant that attacks the respiratory system, leading to the damage of lung tissue. Short-term O_3 exposure can reduce lung function in children, make persons susceptible to respiratory infection, and produce symptoms that cause people to seek medical treatment for respiratory distress. Long-term exposure can impair lung defense mechanisms and lead to emphysema and chronic bronchitis. A healthy person exposed to high concentrations may become nauseated or dizzy, may develop headache or cough, or may experience a burning sensation in the chest. Sensitivity to O_3 varies among individuals, but about 20 percent of the population is sensitive to O_3, with exercising children being particularly vulnerable.

O_3 is formed in the atmosphere by a complex series of photochemical reactions that involve "ozone precursors" that consist of two families of pollutants: oxides of nitrogen (NO_x) and reactive organic gases (ROG). NO_x and ROG are emitted from a variety of stationary and mobile sources. While NO_2, an oxide of nitrogen, is another criteria pollutant itself, ROGs are not in that category, but are included in this discussion as O_3 precursors. Recently, CARB adopted an 8-hour health based standard for O_3 of 0.070 ppm. More recently, US EPA revised the 8-hour NAAQS for O_3 from 0.08 ppm to 0.075 ppm.

Carbon Monoxide (CO)

CO is a colorless, odorless, poisonous gas. Carbon monoxide's health effects are related to its affinity for hemoglobin in the blood. Exposure to high concentrations of CO reduces the oxygen-carrying capacity of the blood and can cause dizziness and fatigue, and causes reduced lung capacity, impaired mental abilities and central nervous system function, and induces angina in persons with serious heart disease. Primary sources of CO in ambient air are passenger cars, light-duty trucks, and residential wood burning. The monitored CO levels in the Valley during the last 10 years have been well below ambient air quality standards.

Nitrogen Dioxide (NO_2)

The major health effect from exposure to high levels of NO_2 is the risk of acute and chronic respiratory disease. NO_2 is a combustion by-product, but it can also form in the atmosphere by chemical reaction. NO_2 is a reddish-brown colored gas often observed during the same conditions that produce high levels of O_3 and can affect regional visibility. NO_2 is one compound in a group of compounds consisting of

oxides of nitrogen (NO_x). As described above, NO_x is an O_3 precursor compound. Monitored levels of NO_2 in the Valley are below ambient air quality standards.

Particulate Matter (PM)

Respirable particulate matter (PM_{10}) and fine particulate matter ($PM_{2.5}$) consist of particulate matter that is 10 microns or less in diameter and 2.5 microns or less in diameter, respectively. PM_{10} and $PM_{2.5}$ represent fractions of particulate matter that can be inhaled and cause adverse health effects. PM_{10} and $PM_{2.5}$ are a health concern, particularly at levels above the Federal and State ambient air quality standards. $PM_{2.5}$ (including diesel exhaust particles) is thought to have greater effects on health because minute particles are able to penetrate to the deepest parts of the lungs. Scientific studies have suggested links between fine particulate matter and numerous health problems including asthma, bronchitis, acute and chronic respiratory symptoms such as shortness of breath and painful breathing. Children are more susceptible to the health risks of $PM_{2.5}$ because their immune and respiratory systems are still developing. These fine particulates have been demonstrated to decrease lung function in children. Certain components of PM are linked to higher rates of lung cancer. Very small particles of certain substances (e.g., sulfates and nitrates) can also directly cause lung damage or can contain absorbed gases (e.g., chlorides or ammonium) that may be injurious to health.

Particulate matter in the atmosphere results from many kinds of dust- and fume-producing industrial and agricultural operations, fuel combustion, and atmospheric photochemical reactions. Some sources of particulate matter, such as mining and demolition and construction activities, are more local in nature, while others, such as vehicular traffic, have a more regional effect. In addition to health effects, particulates also can damage materials and reduce visibility. Dust comprised of large particles (diameter greater than 10 microns) settles out rapidly and is more easily filtered by human breathing passages. This type of dust is considered more of a soiling nuisance rather than a health hazard.

In 1983, CARB replaced the standard for "suspended particulate matter" with a standard for suspended PM_{10} or "respirable particulate matter." The current PM_{10} standard is 20 micrograms per cubic meter ($\mu g/m^3$) for an annual average. $PM_{2.5}$ standards were first promulgated by the EPA in 1997 and were since revised to lower the 24-hour $PM_{2.5}$ standard to 35 $\mu g/m^3$ for 24-hour exposures. That same action by EPA revoked the annual PM_{10} standard due to lack of scientific evidence correlating long-term exposures of ambient PM_{10} with health effects. CARB has only adopted an annual average $PM_{2.5}$ standard, which is set at 12 $\mu g/m^3$. This is equal to the NAAQS of 12 $\mu g/m^3$.

Toxic Air Contaminants

Besides the "criteria" air pollutants, there is another group of substances found in ambient air referred to as Hazardous Air Pollutants (HAPs) under the Federal Clean Air Act and Toxic Air Contaminants (TACs) under the California Clean Air Act. These contaminants tend to be localized and are found in relatively low concentrations in ambient air. However, they can result in adverse chronic health effects if exposure to low concentrations occurs for long periods. They are regulated at the local, state, and federal level.

HAPs are the air contaminants identified by US EPA as known or suspected to cause cancer, serious illness, birth defects, or death. Many of these contaminants originate from human activities, such as fuel combustion and solvent use. Mobile source air toxics (MSATs) are a subset of the 188 HAPS. Of the 21 HAPs identified by EPA as MSATs, a priority list of six priority HAPs were identified that include: diesel

exhaust, benzene, formaldehyde, acetaldehyde, acrolein, and 1,3-butadiene. While vehicle miles traveled in the United States is expected to increase by 64% over the period 2000 to 2020, emissions of MSATs are anticipated to decrease substantially as a result of efforts to control mobile source emissions (by 57% to 67% depending on the contaminant).

California developed a program under the Tanner Toxics Act (Assembly Bill [AB] 1807) to identify, characterize and control TACs. Subsequently, AB 2728 incorporated all 188 HAPs into the AB 1807 process. TACs include all HAPs plus other containments identified by CARB. These are a broad class of compounds known to cause morbidity or mortality (cancer risk). TACs are found in ambient air, especially in urban areas, and are caused by industry, agriculture, fuel combustion, and commercial operations (e.g., dry cleaners). TACs are typically found in low concentrations, even near their source (e.g., diesel particulate matter near a freeway). Because chronic exposure can result in adverse health effects, TACs are regulated at the regional, state, and federal level.

Particulate matter from diesel exhaust is the predominant TAC in urban air and is estimated to represent about 70 percent of the cancer risk from TACs (based on the statewide average). According to CARB, diesel exhaust is a complex mixture of gases, vapors and fine particles. This complexity makes the evaluation of health effects of diesel exhaust a complex scientific issue. Some chemicals in diesel exhaust, such as benzene and formaldehyde, have been previously identified as TACs by ARB, and are listed as carcinogens either under State Proposition 65 or under the Federal Hazardous Air Pollutants programs.

CARB reports that recent air pollution studies have shown an association that diesel exhaust and other cancer-causing toxic air contaminants emitted from vehicles are responsible for much of the overall cancer risk from TACs in California. Particulate matter emitted from diesel-fueled engines (diesel particulate matter [DPM]) was found to comprise much of that risk. In August 1998, CARB formally identified DPM as a TAC. Diesel particulate matter is of particular concern since it can be distributed over large regions, thus leading to widespread public exposure. The particles emitted by diesel engines are coated with chemicals, many of which have been identified by EPA as HAPs, and by CARB as TACs. Diesel engines emit particulate matter at a rate about 20 times greater than comparable gasoline engines. The vast majority of diesel exhaust particles (over 90 percent) consist of $PM_{2.5}$, which are the particles that can be inhaled deep into the lung. Like other particles of this size, a portion will eventually become trapped within the lung possibly leading to adverse health effects. While the gaseous portion of diesel exhaust also contains TACs, CARB's 1998 action was specific to DPM, which accounts for much of the cancer-causing potential from diesel exhaust. California has adopted a comprehensive diesel risk reduction program to reduce DPM emissions 85 percent by 2020. The U.S. EPA and CARB adopted low sulfur diesel fuel standards in 2006 that reduce diesel particulate matter substantially. Between 2006 and 2012, statewide ambient DPM concentrations were reduced almost 50 percent.

Smoke from residential wood combustion can be a source of TACs. Wood smoke is typically emitted during winter when dispersion conditions are poor. Localized high TAC concentrations can result when cold stagnant air traps smoke near the ground and, with no wind the pollution can persist for many hours, especially in sheltered valleys during winter. Wood smoke also contains a significant amount of PM_{10} and $PM_{2.5}$. Wood smoke is an irritant and is implicated in worsening asthma and other chronic lung problems.

Exposure to TACs is usually evaluated in terms of health risk or cancer risk. For cancer health effects, the risk is expressed as the number of chances in a population of a million people who might be expected to get cancer over a 70-year lifetime. Based on CARB's 2012 estimates of statewide exposure, DPM is estimated to increase statewide cancer risk by 520 cancers per million residents exposed over a lifetime.

Existing Air Quality

As previously discussed, the San Joaquin Valley experiences poor air quality conditions, due primarily to elevated levels of ozone and particulate matter. CARB, in cooperation with SJVAPCD, monitors air quality throughout the San Joaquin Valley Air Basin. Monitoring data presented in Table AQ-2 was derived for each pollutant based upon the closest monitoring station to the project site.

TABLE AQ-2
SUMMARY OF CRITERIA AIR POLLUTION MONITORING DATA

Pollutant	Standard	Monitoring Site	Monitored Values		
			2014	2015	2016
Ozone (ppm)	State 1-Hour	Hanford	0.108	0.119	0.097
Ozone (ppm)	State 8-Hour	Hanford	0.095	0.094	0.088
Ozone (ppm)	Federal 8-Hour	Hanford	0.094	0.094	0.088
PM_{10} (ug/m3)	Federal 24-Hour	Hanford	131	137	152
PM_{10} (ug/m3)	State 24-Hour	Hanford	126	109	110
$PM_{2.5}$ (ug/m3)	Federal 24-Hour	Hanford	96.7	98.2	59.7
Carbon Monoxide (ppm)	State/Federal 8-Hour	Air Basin Average	ND	ND	ND
Nitrogen Dioxide (ppb)	State 1-Hour	Hanford	50	51	52

Ozone

In California, ozone concentrations are generally lower near the coast than inland. The inland regions, such as the San Joaquin Valley, typically experience some of the higher ozone concentrations. This is because of the greater frequency of hot days and stagnant conditions that are conducive to ozone formation. Some areas of the Valley lie downwind of urban areas that are a source of ozone precursor pollutants.

Particulate Matter ($PM_{2.5}$ and PM_{10})

Most areas of California have either 24-hour or annual PM_{10} concentrations that exceed the State standards. Most urban areas exceed the State annual standard and the 24-hour federal standard. In the San Joaquin Valley, there is a strong seasonal variation in PM, with higher PM_{10} and $PM_{2.5}$ concentrations occurring in the fall and winter months. These higher concentrations are caused by increased activity for some emission sources and meteorological conditions that are conducive to the build-up of particulate matter. Industry and motor vehicles consistently emit particulate matter. Seasonal sources of particulate matter in San Joaquin Valley include wildfires, agricultural activities, windblown dust, and residential wood burning. In California, area sources, which primarily consist of fugitive dust, account for the majority of directly emitted particulate matter. This includes dust from paved and unpaved roads. CARB estimates that 85 percent of directly emitted PM_{10} and 66 percent of directly emitted $PM_{2.5}$ is from area sources. During the winter, the $PM_{2.5}$ size fraction makes up much of the total particulate matter concentrations. The major contributor to high levels of ambient $PM_{2.5}$ is the secondary formation of particulate matter caused by the reaction of NO_x and ammonium to form ammonium nitrate. CARB estimates that the secondary portion of $PM_{2.5}$ makes up about 50 percent of the annual concentrations in the San Joaquin Valley. The San Joaquin Valley also records high PM_{10} and $PM_{2.5}$ levels during the fall.

Carbon Monoxide

State and federal standards for carbon monoxide are met throughout California as a result of cleaner vehicles and fuels that were reformulated in the 1990s. For CO, the monitored value used was the air basin average data, as this value most likely represents the average air quality in the WSP area.

Other Pollutants

Air monitoring data indicate that the San Joaquin Valley meets ambient air quality standards all other air pollutants.

Air Quality Trends

Air quality in the Valley has improved significantly despite a natural low capacity for pollution, created by unique geography, topography, and meteorology. Emissions have been reduced at a rate similar or better than other areas in California. Since 1990, emissions of ozone precursors (i.e., NO_x and ROG) have been reduced by 40 percent or greater, resulting in much fewer days where ozone standards have been exceeded. Direct emissions of PM_{10} and $PM_{2.5}$ have been reduced by 10 to 13 percent. As a result, the San Joaquin Valley is the first air basin that was previously classified as "serious nonattainment" under the NAAQS to come into attainment of the PM_{10} standards.

Attainment Status

Areas that do not violate ambient air quality standards are considered to have attained the standard. Violations of ambient air quality standards are based on air pollutant monitoring data and are judged for each air pollutant. The San Joaquin Valley as a whole does not meet State or federal ambient air quality standards for ground level O_3 or State standards for PM_{10} and $PM_{2.5}$. The attainment status for the Valley with respect to various pollutants of concern is described in Table AQ-3.

TABLE AQ-3
WSP AREA ATTAINMENT STATUS

Pollutant	Federal Status	State Status
Ozone (O_3) – 1-Hour Standard	No Federal Standard	Severe Nonattainment
Ozone (O_3) – 8-Hour Standard	Extreme Nonattainment	Nonattainment
Respirable Particulate Matter (PM_{10})	Attainment-Maintenance	Nonattainment
Fine Particulate Matter ($PM_{2.5}$)	Nonattainment	Nonattainment
Carbon Monoxide (CO)	Attainment/Unclassified	Attainment/Unclassified
Nitrogen Dioxide (NO_2)	Attainment/Unclassified	Attainment
Sulfur Dioxide (SO_2)	Attainment/Unclassified	Attainment
Sulfates and Lead	No Federal Standard	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Visibility Reducing Particles	No Federal Standard	Unclassified

Under the Federal Clean Air Act, the US EPA has classified the region as *extreme nonattainment* for the 8-hour O_3 standard. The Valley has attained the NAAQS for PM_{10}. The Valley is designated *nonattainment* for the older 1997 $PM_{2.5}$ NAAQS. SJVAPCD has determined, based on the 2004-06 $PM_{2.5}$ data, that the Valley has attained the 1997 24-Hour $PM_{2.5}$ standard; however, US EPA recently designated the Valley as nonattainment for the newer 2006 24-hour $PM_{2.5}$ standard. The US EPA classifies the region as *attainment* or *unclassified* for all other air pollutants, which include CO and NO_2.

At the State level, the region is considered *severe non-attainment* for ground level O_3 and *non-attainment* for PM_{10} and $PM_{2.5}$. California ambient air quality standards are more stringent than the national ambient air quality standards. The region is required to adopt plans on a triennial basis that show progress towards meeting the State O_3 standard. The area is considered attainment or unclassified for all other pollutants.

Regional Air Quality Plans

In response to not meeting the NAAQS, the region is required to submit attainment plans to US EPA through the State, which are referred to as State Implementation Plans (SIP).

CARB submitted the 2004 Extreme Ozone Attainment Demonstration Plan to EPA in 2004, which addressed the old 1-hour NAAQS. The region's 2007 Ozone Plan (Plan), addressing the 8-hour ozone NAAQS, was submitted to US EPA and approved in March 2012. The Plan predicts attainment of the standard throughout 90 percent of the Air District by 2020 and the entire District by 2024. To accomplish these goals, the plan would reduce NO_x emissions further by 75 percent and ROG emissions by 25 percent. A wide variety of control measures are included in these plans, such as reducing or offsetting emissions from construction and traffic associated with land use developments. The air basin was recently designated by US EPA as an extreme ozone nonattainment area for the more stringent

2008 8-hour ozone NAAQS. The Plan to address this standard was adopted by the District's Governing Board in June 2016. Addressing the 2008 8-hour ozone standard will pose a tremendous challenge for the Valley, given the naturally high background ozone levels and ozone transport into the Valley.

The SJVAPCD's 2012 $PM_{2.5}$ Plan on was approved by CARB 2013. This plan predicts that the Valley will attain the 2006 $PM_{2.5}$ NAAQS by the 2019 deadline. The plan uses control measures to reduce NOx, which also leads to fine particulate formation in the atmosphere. The plan incorporates measures to reduce direct emissions of $PM_{2.5}$, including a strengthening of regulations for various Air Basin industries and the general public through new rules and amendments.

Both the ozone and $PM_{2.5}$ plans include all measures (i.e., federal, state and local) that would be implemented through rule making or program funding to reduce air pollutant emissions. Transportation Control Measures (TCMs) are part of these plans. The plans described above addressing ozone also meet the state planning requirements.

SJVAPCD Rules and Regulations

The SJVAPCD has adopted rules and regulations that apply to land use projects, such as the WSP solar projects. These are described below.

Indirect Source Review (ISR) Rule

On December 15, 2005, the SJVAPCD adopted the Indirect Source Review Rule (ISR or Rule 9510) to reduce ozone precursor (i.e., ROG and NO_x) and PM_{10} emissions from new land use development projects. The rule is the result of state requirements outlined in the region's portion of the State Implementation Plan (SIP). The SJVAPCD's SIP commitments are contained in the 2004 Extreme Ozone Attainment Demonstration Plan and the 2003 PM_{10} Plan. These plans identified the need to reduce PM_{10} and NO_x substantially in order to attain and maintain the ambient air-pollution standards on schedule.

New projects that would generate substantial air pollutant emissions are subject to this rule. The rule requires projects to mitigate both construction and operational period emissions by applying the SJVAPCD-approved mitigation measures and paying fees to support programs that reduce emissions. The rule establishes minimum floor areas for various types of development (i.e., commercial, industrial, office, etc.) for which ISR compliance is required. For land uses not specifically identified, such as solar projects, the minimum floor area is 9,000 square feet. Since the WSP solar projects would each exceed 9,000 feet, this rule would be applicable to each WSP solar project. The rule requires mitigated exhaust emissions during construction based on the following levels:

- 20% reduction from unmitigated baseline in total NO_x exhaust emissions
- 45% reduction from unmitigated baseline in total PM_{10} exhaust emissions

For operational emissions, Rule 9510 requires the following reductions:

- 33.3% of the total operational NO_x emissions from unmitigated baseline
- 50% of the total operational PM_{10} exhaust emissions from unmitigated baseline

Fees apply to the unmitigated portion of the emissions and are based on estimated costs to reduce the emissions from other sources plus estimated costs to cover administration of the program. In accordance with ISR, each WSP solar project will be required to submit an Air Impact Assessment (AIA) to the Air District prior to submittal of the last discretionary permit application to Kings County.

Regulation VIII – Fugitive PM_{10}

SJVAPCD controls fugitive PM_{10} through Regulation VIII (Fugitive PM_{10} Prohibitions). The purpose of this regulation is to reduce ambient concentrations of PM_{10} by requiring actions to prevent, reduce or mitigate anthropogenic (human caused) fugitive dust emissions. This applies to activities such as construction, bulk materials, open areas, paved and unpaved roads, material transport, and agricultural areas. Sources regulated are required to provide dust control plans for Air District approval that meet the regulation requirements. Fees are collected by SJVAPCD to cover costs for reviewing plans and conducting field inspections.

Other SJVAPCD Regulation

The solar generating facilities and gen-tie projects constructed within the plan area may be subject to other District rules such as: Rule 4102 (Nuisance), Rule 4601 (Architectural Coatings), and Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations).

Sensitive Receptors

"Sensitive receptors" are defined as facilities where sensitive population groups, such as children, the elderly, the acutely ill, and the chronically ill, are likely to be located. These land uses include schools, playgrounds, childcare centers, retirement homes, convalescent homes, hospitals, medical clinics, and residential areas. Worker locations are typically not considered sensitive receptors. The sensitive receptors within about one mile of the WSP and transmission corridors listed in Table AQ-4 below.

Westlands Solar Park

As shown in Table AQ-4, there are several sensitive receptors within one mile of the project boundaries, all of which consist of residences. Immediately adjacent to the WSP plan area, there are about 20 residential dwellings at Shannon Ranch near Lincoln/Gale Avenue and Avenal Cutoff Road, and two residential dwellings at Stone Land Company Ranch along Nevada Avenue, east of Avenal Cutoff Road. The next nearest residences consist of two ranch complexes with a total of 6 dwellings on the east side of Highway 41 near Nevada Avenue. To the northeast, between the Kings River and the east WSP boundary, there are a series of 4 residences along and near 22nd Avenue which runs north-south approximately one mile east of the WSP boundary. The nearest schools are located at least 3 miles from the WSP Plan Area in Lemoore and Stratford, and the nearest hospital is located 3 miles northeast at Naval Air Station Lemoore. In total, there are 32 sensitive receptors within 1 mile of the Westlands Solar Park, of which 22 are located within 1,000 feet of the WSP boundaries. (The locations of these sensitive receptors are shown in Figure PD-2 in Chapter *2. Project Description*.)

WSP Gen-Tie Corridors

Along the full 23.0-mile length of the WSP gen-tie corridors, there are 20 rural dwellings located within one mile of the corridor boundaries. Of this total, 10 rural dwellings are located within 1,000 feet of the corridor boundaries. These sensitive receptors are listed in Table AQ-4 below by gen-tie segment, including receptors located within one mile, and of those, the receptors located within 1,000 feet of the corridor boundaries. (The sensitive receptor locations are shown in Figures PD-7 in Chapter *2. Project Description*.)

TABLE AQ-4
SENSITIVE RECEPTORS

Map Ref. [Figure PD-7]	Receptor	Location	Distance from WSP Plan Area or Gen-Tie Corridor*	Receptors Within 1,000 feet*
	Westlands Solar Park			
1	20 ranch resid. (Shannon Ranch)	Avenal Cutoff Road/Lincoln Gale Ave.	65 – 600 feet	20
2	2 resid. (Stone Land Co. Ranch)	Nevada Av., 1.5 mi. E. of Avenal Cutoff	165 feet	2
3	4 ranch resid. (Westlake Farms)	SR-41, 1.3 mi. S. of Nevada Avenue	0.7 – 0.9 miles	0
4	2 ranch dwellings	Nevada Ave., just east of SR-41	0.5 – 0.6 miles	0
5	4 rural residences	22nd Ave., north of SR-41	0.9 – 1.0 miles	0
	WSP Gen-Tie Corridors			
	WSP-North to Gates Gen-Tie (11.5 miles)			
6	2 ranch dwellings	N. of Gale, 1.5 mi. E. of CA Aqueduct	0.4 – 0.5 miles	0
7	4 ranch dwellings	Gale Ave., 0.7 mi. E. of CA Aqueduct	0.3 – 0.4 miles	0
8	1 ranch dwelling	Tractor Ave., 1.0 mi. E. of SR-269	0.6 miles	0
9	3 ranch dwellings	Tractor Ave., 0.2 mi. E. of SR-269	0.9 miles	0
	WSP-South to Gates Gen-Tie (11.5 miles)			
2	2 resid. (Stone Land Co. Ranch)	Nevada Ave., 1.5 mi. E of Avenal Cutoff	180 feet	2
10	8 ranch dwellings	Nevada Ave., 1.3 mi. E of SR-269	125 feet	8

*0.19 miles = 1,000 feet.

WSP-North to Gates Gen-Tie. Along this 11.5-mile gen-tie corridor, there are 10 rural dwellings, of which none are within 1,000 feet of the corridor boundary.

WSP-South to Gates Gen-Tie. There are 10 rural residences long this 11.5-mile gen-tie corridor, all of which are located between 125 feet and 180 feet from the corridor boundary.

Buffers from Sources of Air Pollution

The SJVAPCD and CARB recommend that communities include buffers between sensitive receptors and sources of air toxic contaminant emissions and odors. In April 2005, CARB released the final version of the Air Quality and Land Use Handbook, which is intended to encourage local land use agencies to consider the risks from air pollution prior to making decisions that approve the siting of new sensitive receptors near sources of air pollution. CARB made recommendations regarding the siting of new sensitive land uses near freeways, truck distribution centers, dry cleaners, gasoline dispensing stations, and other air pollution sources. The WSP does not include any of the type of sources listed by CARB.

Greenhouse Gas Regulations and Guidance

State of California

Regulations addressing GHG emissions from land use development projects are primarily driven by the State. AB 32, the Global Warming Solutions Act of 2006, codifies the State of California's GHG emissions target by directing CARB to reduce the state's global warming emissions to 1990 levels by 2020. AB 32 was signed and passed into law by Governor Schwarzenegger on September 27, 2006. Since that time, CARB, the California Energy Commission (CEC), the California Public Utilities Commission (CPUC), and the California Building Standards Commission (CBSC) have all been developing regulations that will help meet the goals of AB 32.

A Scoping Plan for AB 32 was adopted by CARB in December 2008. It contains the State of California's main strategies to reduce GHGs from Business-As-Usual (BAU) emissions projected in 2020 back down to 1990 levels. BAU is the quantification of projected emissions in 2020, including increases in emissions caused by growth, without any GHG reduction measures. The Scoping Plan has a range of GHG reduction actions, including direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms such as a cap-and-trade system. It required CARB and other state agencies to develop and adopt regulations and other initiatives reducing GHGs by 2012.

As directed by AB 32, CARB has also approved a statewide GHG emissions limit. CARB established the amount of 427 MMT of CO_2e as the total statewide GHG 1990 emissions level and 2020 emissions limit. The limit is a cumulative statewide limit, not a sector- or facility-specific limit. The 2008 Scoping Plan estimated that 2020 Business as Usual (BAU) emissions would be 596 MMT of CO2e, indicating that a statewide reduction of 28 percent would be required to achieve 1990 emissions levels. In 2011 CARB revised the 2020 BAU annual emissions forecast downward to 507 MMT of CO_2e. Thus, an estimated reduction of 80 MMT of CO_2e (a 16% reduction from the revised 2020 BAU) was determined to be necessary to reduce statewide emissions to meet the AB 32 target by 2020. In April 2015, Governor Brown signed Executive Order EO-B-30-15 which sets a greenhouse gas emissions target at 40 percent of 1990 levels by 2030. On September 8, 2016, Governor Brown signed SB 32, which establishes by statute the GHG reduction target of 40 percent of 1990 levels by 2030. The CARB is currently updating the AB 32 Scoping Plan to reflect the 2030 target.

Beyond 2030, Executive Order S-3-05 sets a GHG emissions reduction target of 80 percent below 1990 levels by 2050. The incremental rate of emissions reductions mandated in SB 32, if sustained beyond 2030 on a State-wide basis, would achieve the 2050 target by 2040 (Draft Scoping Plan Update, Figure I-5, p. 26). The draft Scoping Plan Update states that "SB 32 builds on AB 32 and keeps us on the path toward achieving the State's 2050 objective of reducing emissions to 80 percent below 1990 levels" (CARB 2017, p. 3).

In September 2015, the California Legislature passed SB 350, which increases the states Renewables Portfolio Standard (RPS) for content of electrical generation from the 33 percent target for 2020 to a 50 percent renewables target by 2030.

San Joaquin Valley Air Pollution Control District

In August 2008, the San Joaquin Valley Air Pollution Control District adopted the Climate Change Action Plan (CCAP). The goals of the CCAP are to establish District processes for assessing the significance of project specific GHG impacts for projects permitted by the District; assist local land use agencies, developers, and the public by identifying and quantifying GHG emission reduction measures for development projects, and by providing tools to streamline evaluation of project specific GHG effects; ensure that collateral emissions from GHG emission reduction projects do not adversely impact public health or environmental justice communities in the Valley; and assist Valley businesses in complying with state law related to GHG emission reduction. In particular, the CCAP directed the District's Air Pollution Control Officer to develop guidance to assist District staff, valley businesses, land use agencies, and other permitting agencies in addressing GHG emissions as part of the CEQA process. Pursuant to this directive, on December 17, 2009, SJVAPCD adopted *Guidance for Valley Land-Use Agencies in Addressing GHG Emissions Impacts for New Projects under CEQA* (described below). The CCAP also directs District staff to investigate and develop a greenhouse gas banking program, enhance the existing emissions inventory process to include greenhouse gas emissions reporting consistent with new state requirements, and administer voluntary greenhouse gas emission reduction agreements.

SJVAPCD's Guidance for Addressing GHG Emissions Impacts under CEQA

Under its mandate to provide local agencies with assistance in complying with CEQA in climate change matters, SJVAPCD has developed *Guidance for Valley Land-Use Agencies in Addressing GHG Emissions Impacts for New Projects under CEQA, which was updated in March 2015.* As a general principal to be applied in determining whether a proposed project would be deemed to have a less-than-significant impact on global climate change, a project must be determined to have reduced or mitigated GHG emissions by 29 percent relative to Business-As-Usual conditions. The SJVAPC considers this emissions reduction target to be consistent with GHG emission reduction targets established in CARB's Scoping Plan for AB 32 implementation. The SJVAPCD guidance is intended to streamline the process of determining if project specific GHG emissions would have a significant effect. The proposed approach relies on the use of performance-based standards and their associated pre-quantified GHG emission reduction effectiveness (Best Performance Standards). Establishing Best Performance Standards (BPS) is intended to help project proponents, lead agencies, and the public by proactively identifying effective, feasible mitigation measures. Emission reductions achieved through implementation of BPS would be pre-quantified, thus reducing the need for project specific quantification of GHG emissions. For land use development projects, BPS would include emissions reduction credits for such project features as bicycle racks, pedestrian access to public transit, and so forth. Projects implementing a sufficient level of Best Performance Standards would be determined to have a less-than-significant individual and cumulative impact on global climate change and would not require project specific quantification of GHG emissions. For all projects for which the lead agency has determined that an Environmental Impact Report is required, quantification of GHG emissions would be required whether or not the project incorporates Best Performance Standards. SJVAPCD's guidance document does not constitute a rule or regulation, but is intended for use by other agencies in their assessment of the significance of project impacts to global climate change under CEQA.

Kings County

Kings County General Plan

The Westlands Solar Park and small portions of the transmission corridors are located within Kings County. The 2035 Kings County General Plan contains the following goals, objectives and policies related to air quality that are relevant to the Westlands Solar Park and transmission corridors:

Air Quality Element

C. Air Quality Management

AQ GOAL C1 Use Air Quality Assessment and Mitigation programs and resources of the SJVAPCD and other agencies to minimize air pollution, related public health effects, and potential climate change impacts within the County.

AQ OBJECTIVE C1.1 Accurately assess and mitigate potentially significant local and regional air quality and climate change impacts from proposed projects within the County.

AQ Policy C1.1.1: Assess and mitigate project air quality impacts using analysis methods and significance thresholds recommended by the SJVAPCD and require that projects do not exceed established SJVAPCD thresholds.

AQ Policy C1.1.2: Assess and mitigate project greenhouse gas/climate change impacts using analysis methods and significance thresholds as defined or recommended by the SJVAPCD, KCAG or California Air Resources Board (ARB) depending on the type of project involved.

AQ Policy C1.1.3: Ensure that air quality and climate change impacts identified during CEQA review are minimized and consistently and fairly mitigated at a minimum, to levels as required by CEQA.

AQ Policy C1.1.5: Assess and reduce the air quality and potential climate change impacts of new development projects that may be insignificant by themselves but, taken together, may be cumulatively significant for the County as a whole.

F. Hazardous Emissions and Public Health

AQ GOAL F1 Minimize exposure of the public to hazardous air pollutant emissions, particulates and noxious odors from freeways, major arterial roadways, industrial, manufacturing, and processing facilities.

AQ OBJECTIVE F2.1 Reduce emissions of PM10, PM2.5 and other particulates from sources with local control potential or under the jurisdiction of the County.

AQ Policy F2.1.2: Require all access roads, driveways, and parking areas serving new commercial and industrial development are constructed with materials that

minimize particulate emissions and are appropriate to the scale and intensity of use.

G. Climate Change

AQ GOAL G1 Reduce Kings County's proportionate contribution of greenhouse gas emissions and the potential impact that may result on climate change from internal governmental operations and land use activities within its authority.

AQ OBJECTIVE G1.1 Identify and achieve greenhouse gas emission reduction targets consistent with the County's proportionate fair share as may be allocated by ARB and KCAG.

AQ Policy G1.1.1: As recommended in ARB's Climate Change Adopted Scoping Plan (December 2008), the County establishes an initial goal of reducing greenhouse gas emissions from its internal governmental operations and land use activities within its authority to be consistent with ARB's adopted reduction targets for the year 2020. The County will also work with KCAG to ensure that it achieves its proportionate fair share reduction in greenhouse gas emissions as may be identified under the provisions of SB 375 (2008 Chapter 728) for any projects or activities requiring approval from KCAG.

Fresno County General Plan

Portions of the transmission corridors are located in Fresno County. The Fresno County General Plan contains the following goals and policies related to air quality that are relevant to the transmission corridors:

Open Space and Conservation Element

G. Air Quality

GOAL OS-G To improve air quality and minimize the adverse effects of air pollution in Fresno County.

Policy OS-G.13 The County shall include fugitive dust control measures as a requirement for subdivision maps, site plans, and grading permits. This will assist in implementing the SJVAPCD's particulate matter of less than ten (10) microns (PM10) regulation (Regulation VIII). Enforcement actions can be coordinated with the Air District's Compliance Division.

Policy OS-G.14 The County shall require all access roads, driveways, and parking areas serving new commercial and industrial development to be constructed with materials that minimize particulate emissions and are appropriate to the scale and intensity of use.

3.3.3. ENVIRONMENTAL IMPACT ANALYSIS

SIGNIFICANCE CRITERIA

Based on the State CEQA Guidelines, Appendix G, the project would be considered to have a significant impact on air quality and climate change if it would:

a. Conflict with or obstruct implementation of the applicable air quality plan. (Impact AQ-7.)

b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation. (Impacts AQ-1, AQ-2, and AQ-3.)

c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors). (Impacts AQ-1, AQ-2, and AQ-3.)

d. Expose sensitive receptors to substantial pollutant concentrations. (Impacts AQ-4 and AQ-5.)

e. Create objectionable odors affecting a substantial number of people. (Impact AQ-6.)

f. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant effect on the environment. (Impact AQ-8.)

g. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. (Impact AQ-9.)

The SJVAPCD has developed the Guide for Assessing and Mitigating Air Quality Impacts (SJVAPCD 2015), also known as the GAMAQI. The following thresholds of significance, as set forth in the SJVAPCD's GAMAQI, are applied to determine whether a proposed project would result in a significant air quality impact:

1) Construction Emissions of PM. Construction projects are required to comply with Regulation VIII as adopted by the SJVAPCD; however, the size of the project and the proximity to sensitive receptors may warrant additional measures.

2) Criteria Air Pollutant Emissions. SJVAPCD's current adopted thresholds of significance for criteria pollutant emissions and their application is presented in Table AQ-5. These thresholds address both construction and operational emissions. Note that the District treats permitted equipment and activities separately.

3) Ambient Air Quality. Emissions that are predicted to cause or contribute to a violation of an ambient air quality would be considered a significant impact. SJVAPCD recommends that dispersion modeling be conducted for construction or operation when on-site emissions exceed 100 pounds per day for any criteria pollutant after implementation of all mitigation measures.

4) Local CO Concentrations. Traffic emissions associated with the proposed project would be considered significant if the project contributes to CO concentrations at receptor locations in excess of the ambient air quality standards.

5) Toxic Air Contaminants or Hazardous Air Pollutants. Exposure to HAPs or TACs would be considered significant if the probability of contracting cancer for the Maximally Exposed Individual would exceed 20 in 1 million or would result in a Hazard Index greater than 1 for non-cancer health effects.

6) Odors. Odor impacts associated with the proposed project would be considered significant if the project has the potential to frequently expose members of the public to objectionable odors through development of a new odor source or placement of receptors near an existing odor source.

7) GHGs. In SJVAPCD's *Guidance for Valley Land-Use Agencies in Addressing GHG Emissions Impacts for New Projects under CEQA*, the District recommends that land use development projects demonstrate a 29 percent reduction in GHG emissions from Business-As-Usual (BAU).

TABLE AQ-5

SJVAPCD AIR QUALITY THRESHOLDS OF SIGNIFICANCE

CRITERIA POLLUTANT EMISSION LEVELS IN TONS PER YEAR (TPY)

Pollutant/Precursor	Construction Emissions	Operational Emissions	
		Permitted Equipment and Activities	Non-Permitted Equipment and Activities
Carbon Monoxide (CO)	100	100	100
Nitrogen Oxides (NOx)	10	10	10
Reactive Organic Gases	10	10	10
Sulfur Dioxide (SOx)	27	27	27
Particulate Matter – PM_{10}	15	15	15
Particulate Matter – $PM_{2.5}$	15	15	15

With respect to cumulative air quality impacts, the GAMAQI provides that any proposed project that would individually have a significant air quality impact (i.e., exceed significance thresholds for criteria pollutants ROG, NO_x, or PM_{10}) would also be considered to have a significant cumulative impact (SJVAPCD 2015, p. 66). In cases where project emissions are all below the applicable significance thresholds, a project may still contribute to a significant cumulative impact if there are other projects nearby whose emissions would combine with project emissions to result in an exceedance of one or more significance thresholds for criteria pollutants (SJVAPCD 2015, p.108).

IMPACTS AND MITIGATION

Impact AQ-1. Construction Dust

***Westlands Solar Park*. Construction and decommissioning of the WSP solar projects would result in potentially high fugitive particulate matter emissions that would exceed Air District thresholds. (*Less-than-Significant Impact with Mitigation*)**

***WSP Gen-Tie Corridors*. Construction of the WSP gen-tie projects would result in emissions of fugitive particulate matter but the emissions levels would not exceed Air District thresholds. (*Less-than-Significant Impact*)**

This impact analysis addresses significance criteria 'b' and 'c' above.

Westlands Solar Park

Construction activities would temporarily affect local air quality, causing a temporary increase in particulate dust and other pollutants. Dust emission during periods of construction would increase particulate concentrations at neighboring properties. This impact is potentially significant, but it can be mitigated through compliance with existing SJVAPCD requirements, discussed below.

The Westlands Solar Park consists of a series of solar photovoltaic generating facilities covering approximately 21,000 acres with a generating capacity of approximately 2000 MWs. The WSP is planned to be developed as twelve (12) separate solar generating facilities (SGFs) with SGF 1 planned to begin construction in 2018 and SGF 12 anticipated to begin construction in late 2029.

Grading and site disturbance (e.g., vehicle travel on exposed areas) would likely result in the greatest emissions of dust and PM_{10}/$PM_{2.5}$. Windy conditions during construction could cause substantial emissions of PM_{10}/$PM_{2.5}$. The estimated dust emissions from construction of the WSP solar projects are shown in Table AQ-6, on the next page. The table shows emissions of fugitive dust under "uncontrolled" and "controlled" conditions.

The SJVAPCD's GAMAQI emphasizes implementation of effective and comprehensive control measures rather than requiring a detailed quantification of construction emissions. SJVAPCD has adopted a set of PM_{10} fugitive dust rules collectively called Regulation VIII. This regulation essentially prohibits the emissions of visible dust (limited to 20-percent opacity) and requires that disturbed areas or soils be stabilized. Compliance with Regulation VIII during the construction phases of the WSP solar projects would be required.

TABLE AQ-6

WSP SOLAR AND GEN-TIE PROJECTS – CONSTRUCTION FUGITIVE DUST EMISSIONS

Project	On-and Off-Site Fugitive Dust Emissions, Tons per Year			
	PM_{10} Fugitives		$PM_{2.5}$ Fugitives	
	Uncontrolled	Controlled	Uncontrolled	Controlled
Solar Generating Facility (SGF) 1	13.25	3.8	2.33	0.7
SGF 2	**21.13**	4.8	4.06	0.9
South Gen Tie	11.14	2.4	1.51	0.3
Gates Substation Upgrades	0.55	0.1	0.09	0.0
Overlap: SGF 2 + South Gen Tie and Gates Substation Upgrades[3]	***33.07***	*7.2*	*7.68*	*1.7*
SGF 3	13.41	2.9	2.61	1.2
Overlap SGF 2+3[3]	***31.00***	6.7	*2.48*	0.5
SGF 4	**29.98**	7.6	5.53	1.3
SGF 5	**23.27**	6.7	4.08	1.4
SGF 6	**22.24**	5.7	4.10	1.1
SGF 7	**15.43**	3.9	2.84	1.0
SGF 8	**38.02**	8.5	7.33	0.7
SGF 9	**34.52**	8.7	6.40	1.6
SGF 10	**22.49**	5.8	4.18	1.5
SGF 11	**27.16**	7.3	5.07	1.0
SGF 12	**17.15**	4.5	3.07	1.3
N. WSP 230 kV Switchyard	1.10	0.3	1.86	0.8
S. WSP 230 kV Switchyard	1.10	0.3	0.12	0.1
North Gen Tie	11.14	2.4	1.51	0.1
SJVAPCD Significance Thresholds (TPY)	*15*	*15*	*15*	15
Exceeds Threshold	**Yes**	No	Yes	No

Source: Illingworth & Rodkin

Since the SJVAPCD requires implementation of comprehensive dust control measures at each project site, the estimates of uncontrolled emissions are provided as information for purposes of identifying impacts in the absence of the required dust controls. As shown in Table AQ-6, uncontrolled dust emissions from the SGF projects would exceed the Air District's threshold of 15 tons per year. Therefore, the impact of uncontrolled fugitive dust emissions during construction would be a *potentially significant*. Implementation of MM AQ-1 below would reduce the impact to *less than significant*.

WSP Gen-Tie Corridors

During construction of the gen-tie projects and related switchyards, fugitive dust would be generated by grading and excavation for transmission towers, access driveways, and staging areas. The total area of disturbance for the gen-tie projects would be approximately 149 acres. The two potential switching station sites within the WSP plan area would have disturbance areas of up to 10 acres each.

The estimated dust emissions from construction of the transmission projects and related facilities are shown in Table AQ-6. For purposes of analysis, it was assumed that the gen-tie projects would be constructed in different years with each gen-tie project requiring less than one year to complete. As shown in Table AQ-6, the annual uncontrolled construction dust emissions (PM_{10} fugitive) are estimated

to be 11.14 tons each for the south and north gen-ties, which is below the SJVAPCD PM_{10} threshold of 15 tons per year. The related switchyard/substation construction would also result in PM_{10} emissions well below the 15 tons per year threshold. Therefore, the fugitive dust emissions from the gen-tie projects would be *less than significant*.

Although the dust emissions from the gen-tie projects would be less than significant, the gen-tie projects would be required to employ dust controls, as specified in SJVAPCD Regulation VIII (described under MM AQ-1, below).

Mitigation Measures:

***Westlands Solar Park*. Implement the dust control requirements of SJVAPCD Regulation VIII, as set forth in MM AQ-1 below.**

***WSP Gen-Tie Corridors*. No mitigation is required under CEQA. (However, the SJVAPCD will require the implementation of the dust control requirements of SJVAPCD Regulation VIII.)**

MM AQ-1: The following dust control measures of SJVAPCD Regulation VIII and its constituent rules shall be implemented during construction and decommissioning of all WSP solar facilities to reduce construction PM_{10} and $PM_{2.5}$ emissions to less than 15 tons per year for each project:

- **Effective dust suppression (e.g., watering) for land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill and demolition activities.**
- **Effective stabilization of all disturbed areas of a construction site, including storage piles, not used for seven or more days.**
- **Control of fugitive dust from on-site unpaved roads and off-site unpaved access roads.**
- **Removal of accumulations of mud or dirt at the end of the workday or once every 24 hours from public paved roads, shoulders and access ways adjacent to the site.**
- **Cease outdoor construction activities that disturb soils during periods with high winds.**
- **Record keeping for each day dust control measures are implemented.**
- **Limit traffic speeds on unpaved roads to 15 mph.**
- **Install sandbags or other erosion control measures to prevent silt runoff to public roadways.**
- **Landscape or replant vegetation in disturbed areas as quickly as possible.**
- **Prevent the tracking of mud or dirt on public roadways by limiting access to the construction sites. If necessary, use wheel washers for all exiting trucks, or wash off the tires or tracks of all trucks and equipment leaving the site.**
- **Suspend grading activity when winds (instantaneous gusts) exceed 25 mph or dust clouds cannot be prevented from extending beyond the site.**

Based on the provisions of Regulation VIII, the following dust control options were incorporated into the emission estimates for fugitive dust (for controlled emissions) as shown in Table AQ-6:

- Earthwork/Equipment movement on site is controlled by 84% based on the application of watering 3 times per day
- Limiting speeds to less than 15 mph
- Unpaved road use utilized 80% control via watering 2 times per day
- Unpaved road speeds are limited to 15 mph
- Trackout of dirt is controlled by 84% by utilizing graveled entrances, metal cleaning grates, periodic water washing of the pavement and pavement sweeping between washings

As shown in Table AQ-6, the fugitive dust emissions with Regulation VIII dust control measures applied are below the significance threshold of 15 tons per year for all SGFs, gen-ties, and other project elements, as well as combinations of SGFs and related project elements.

Prior to construction of each solar and gen-tie project, the applicant would be required to submit a Dust Control Plan that meets the requirements of Regulation VIII. These plans are reviewed by SJVAPCD and construction cannot begin until Air District approval is obtained. Anyone who prepares or implements a Dust Control Plan must attend a training course conducted by the Air District. Construction sites are subject to SJVAPCD inspections under this regulation.

Impact AQ-2. Construction Exhaust Emissions

***Westlands Solar Park*. Exhaust emissions from equipment and vehicles used in construction of WSP solar projects would exceed the applicable threshold for ozone precursor NOx on a temporary basis, but would not exceed the applicable thresholds for other criteria pollutants. (*Less-than-Significant Impact with Mitigation*)**

***WSP Gen-Tie Corridors*. Exhaust emissions from equipment and vehicles used in construction of the WSP gen-tie projects would not exceed the applicable threshold for ozone precursor NOx or other criteria pollutants. (*Less-than-Significant Impact*)**

This impact analysis addresses significance criteria 'b' and 'c' above.

Westlands Solar Park

Construction equipment exhaust affects air quality both locally and regionally. Emissions of air pollutants that could affect regional air quality were addressed by estimating emissions and comparing them to the SJVAPCD significance thresholds. Emissions of diesel particulate matter (DPM), a Toxic Air Contaminant (TAC), can also affect local air quality. This impact is discussed under Impact AQ-5.

Unmitigated construction exhaust emissions from all WSP solar and transmission projects (on and off-site) are shown in Table AQ-7. (Note: Table AQ-7 also shows PM_{10} and $PM_{2.5}$ fugitive emissions (as controlled with required dust control measures under Air District Regulation VIII) in order to allow aggregation with PM_{10} and $PM_{2.5}$ exhaust emissions and thus provide total values for PM_{10} and $PM_{2.5}$ which would be subject to Air District mitigation requirements.) SJVAPCD regulations that would

TABLE AQ-7

WSP SOLAR AND GEN-TIE PROJECTS – CONSTRUCTION EMISSIONS SUMMARY

Project	On-and Off-Site Construction Emissions, Tons per Year[1]										
	NO_x[1]	CO	ROG	SO_x	PM_{10}[2] Exhaust	PM_{10} Fugitives (Controlled)	PM_{10} Total	$PM_{2.5}$ Exhaust	$PM_{2.5}$ Fugitives (Controlled)	$PM_{2.5}$ Total	CO_2e Annual Total [2]
Solar Generating Facility (SGF) 1	**11.97**	7.85	1.27	0.04	0.37	3.79	4.16	0.37	0.65	1.02	4212
SGF 2	**14.05**	8.74	1.77	0.07	0.54	4.77	5.31	0.54	0.88	1.42	4172
South Gen Tie	9.86	5.32	1.18	0.02	0.42	2.36	2.78	0.42	0.32	0.74	1826
Gates Substation Upgrades	1.27	0.96	0.21	0.01	0.03	0.15	0.15	0.03	0.02	0.05	371
Overlap: SGF 2 + South Gen Tie and Gates Substation Upgrades[3]	***25.43***	*14.99*	*3.16*	*0.07*	*1.03*	*7.19*	*8.22*	*1.03*	*1.67*	*2.23*	*NA*
SGF 3	**12.23**	6.57	1.64	0.03	0.51	2.90	3.41	0.51	***1.20***	1.05	2611
Overlap SGF 2+3[3]	***23.53***	*13.60*	*3.06*	*0.06*	*0.95*	*6.74*	*7.69*	*0.95*	**0.54**	*2.20*	*NA*
SGF 4	9.72	10.11	1.09	0.07	0.21	7.63	7.85	0.21	***1.25***	1.56	6280
SGF 5	**11.02**	9.20	1.08	0.07	0.26	6.72	6.98	0.26	**1.35**	1.40	6219
SGF 6	**10.65**	8.88	1.28	0.05	0.32	5.68	6.00	0.32	**1.14**	1.32	5081
SGF 7	**12.29**	11.19	2.07	0.05	0.53	3.94	4.47	0.53	**1.00**	1.22	5096
SGF 8	4.37	7.00	0.78	0.05	0.14	8.52	8.67	0.14	**0.69**	1.72	4684
SGF 9	5.60	8.97	1.00	0.07	0.19	8.65	8.83	0.19	**1.57**	1.73	6168
SGF 10	4.38	7.10	0.78	0.05	0.13	5.76	5.89	0.13	**1.54**	1.16	5007
SGF 11	9.47	13.79	1.84	0.08	0.34	7.25	7.59	0.34	**1.02**	1.63	7568
SGF 12	3.44	5.31	0.65	0.04	0.11	4.51	4.62	0.11	**1.29**	0.89	3316
N. WSP 230 kV Switchyard	0.93	0.68	0.13	0.01	0.02	0.29	0.31	0.02	**0.78**	0.08	303
S. WSP 230 kV Switchyard	0.72	0.66	0.10	0.01	0.02	0.29	0.31	0.02	**0.05**	0.08	303
North Gen Tie	4.42	4.52	0.70	0.02	0.15	2.36	2.51	0.15	**0.05**	0.51	1786
SGF/Substation Water Use											518
Gen-Tie Line Water Use											20
SJVAPCD Significance Thresholds (TPY)	10	100	10	27			15	15	15	15	NA
Exceeds Threshold	Yes	No	No	No			No	No	No	No	NA
Projects that Exceed Thresholds	SGF 1, 2, 3, 5, 6, & 7	-	-	-				-			-

Notes:
[1] No reduction for ISR assumed.
[2] Metric tons.
Source: Illingworth & Rodkin

apply to construction activities include Rule 4102, regarding creation of a nuisance, Rule 4601 which limits volatile organic compound emissions from architectural coatings, storage and cleanup, and Rule 4641 which limits emissions form asphalt paving materials, and Rule 9510 that applies to indirect sources.

As shown in Table AQ-7, the CEQA significance thresholds for NOx would be exceeded by the annual construction emissions for SGF 1, SGF 2, SGF 3, SGF 5, SGF 6 and SGF 7. (Note: It is anticipated that construction of SGF 2, the South Gen-Tie, and the Gates Substation upgrades may overlap during 2019. It is also possible that construction of SGFs 2 and 3 may overlap in 2020. Thus additional calculations to reflect these scenarios were included in Table AQ-6B for the assumed years when the construction of these project elements would overlap, which is intended to represent the worst-case construction intensity period during the WSP buildout period. As expected, the CEQA thresholds for NOx for these possible overlapping projects were also exceeded. Since the construction of six of the first seven SGFs would exceed the CEQA significance thresholds for NOx, as shown in Table AQ-7, the impact would be significant. Construction period emissions of ROG, CO, SO_2, and PM_{10}/$PM_{2.5}$ for all SGFs would be below the thresholds used by SJVAPCD to judge the significance of construction air quality impacts. The fugitive dust components of PM_{10}/$PM_{2.5}$ emissions would be mitigated to less-than-significant levels through implementation dust control measures required under SJVAPCD Regulation VIII, as specified in MM AQ-1 above. In summary, the construction emissions levels for several SGFs would exceed significance thresholds for NOx, which would represent a *potentially significant impact*. Implementation of MM AQ-2 below would reduce the impact to *less than significant*.

At the end of the productive lives of the WSP solar facilities, after 25 to 30 years of operation, it is assumed that each SGF would be decommissioned. The activities associated with deconstruction would be comparable to construction, but emissions are expected to be substantially lower given anticipated reductions in vehicle and equipment emissions to be phased-in over time per State and federal regulations, and also because of the generally lower intensity of equipment use associated with decommissioning. At the time of decommissioning, emission levels for NOx and ROG are expected to be about 25 percent of construction emissions, and PM_{10} and $PM_{2.5}$ (as exhaust) would be about 45 percent and 23 percent of construction emissions, respectively (Kings County 2012). Thus, for even the largest 250 MW solar facilities, emissions during decommissioning are not expected to exceed SJVAPCD significance thresholds for any criteria pollutants. With the application of Regulation VIII dust control requirements, fugitive PM_{10} emissions are likewise expected to be below the applicable significance thresholds for the even the largest SGFs, as they are for construction. Therefore, the emissions associated with SGF decommissioning would be *less than significant*.

WSP Gen-Tie Corridors

Emissions during construction of the gen-tie projects, switchyards, and Gates substation upgrades would be generated by construction equipment and delivery trucks carrying materials to and from the construction sites and staging areas. As shown in Table AQ-7, the emissions from construction of each gen-tie project, switchyard, and substation upgrade would not exceed the SJVAPCD's significance thresholds for NOx, CO, ROG, SOx, or PM_{10}/$PM_{2.5}$ which would all be well below the SJVAPCD's significance thresholds for these criteria pollutants. Actual construction phasing and scheduling of the each gen-tie project may vary from the sequence assumed in this analysis; however, the worst-case scenario is represented in Table AQ-7 by the overlapping construction of SGF 2, the South Gen-Tie, and the Gates Substation upgrades to accommodate the gen-tie. Under this scenario, the combined NOx emissions in a given year would exceed the SJVAPCD's applicable significance criterion of 15 tons. However, as discussed

above, the construction of an individual gen-tie project, in the absence of a related SGF project, would not exceed the applicable NOx threshold. (If a gen-tie project is planned in conjunction with an SGF project, the combined emissions would be calculated to determine the level of project-specific impact, and if significant, to determine the level of mitigation applicable to the combined project.) The impacts associated with construction exhaust emissions from the construction of single gen-tie alone would be *less than significant.*

Mitigation Measures:

***Westlands Solar Park*. MM AQ-2 shall be implemented during construction of SGFs 1, 2, 3, 5, 6 and 7 to reduce construction NOx emissions to less than 10 tons per year for each project:**

***WSP Gen-Tie Corridors*. No mitigation is required.**

MM AQ-2: NO_x Reduction Measures during Construction. The following measures shall be implemented during construction of SGFs 1, 2, 3, 5, 6, and 7 to reduce construction NO_x emissions to less than 10 tons per year for each project:

a. Utilize Low-Emission Construction Equipment. Develop a plan to use construction equipment with low NO_x emissions. This may include the use of equipment that meets US EPA Tier 3 standards (and equipment that meets Tier 4 standards, if available).

b. Minimize Idling Time. Set idling time limit of 5 minutes or less for construction equipment.

c. Worker Trip Reduction. Evaluate the feasibility of a work shuttle or carpool program to reduce emissions from worker travel.

d. Delivery Truck Trip Reduction. Evaluate the feasibility of methods to reduce truck travel for delivery of equipment, by reducing the number of necessary truck trips.

e. Execute Voluntary Emissions Reduction Agreements. Any solar projects for which the project-specific air quality analysis shows that the above mitigations will not be sufficient to reduce a project's construction emissions of NOx below 10 tons per year, the project proponent shall execute a Voluntary Emissions Reduction Agreement (VERA) with SJVAPCD which provides for further reduction of construction NO_x to reduce the project's NOx emissions to less than 10 tons per year.

Use of Tier 3 equipment for the significant phases of the SGF construction would reduce the on-site project emissions of NO_x by about 30 percent. However, off-site vehicle travel also contributes to NOx emissions. Application of Tier 4 equipment would reduce the on-site emissions still further, but were not quantified, since this equipment may not be available for the construction projects, especially the first few SGFs. (The availability of new Tier 4 equipment is expected to increase over the next five years as it replaces the older tiered fleets, but is assumed to be minimally available during the development of the first four SGFs.) Additionally, reductions can be achieved through the use of newer or retrofitted

construction fleets, a reduction of construction traffic, use of electrical powered stationary equipment, and idling restrictions for equipment and trucks.

The precise reductions in emissions that would be achieved by on-site measures cannot be quantified at this programmatic level of analysis, particularly given the long time horizon of WSP development, and the unknown pace at which cleaner vehicles and equipment will be integrated into construction fleets. However, it is likely that the combined use of Tier 3 and 4 equipment would reduce NO_x emissions for SGFs 1, 3, 5, 6 and 7 to less-than-significant levels, but the NO_x emissions for SGF 2 (and both of the overlap construction combinations listed in Table AQ-7) would likely remain above the 10-ton per year significance threshold, without the implementation of off-site measures through Voluntary Emissions Reductions Agreements (VERAs). (See the next paragraph for a description of VERAs.) For purposes of this analysis, it is expected that the affected SGF applicants within the WSP plan area would be required by Kings County to execute VERAs with the Air District, as needed following project-specific analysis, to reduce NO_x emissions to less-than-significant levels.

In cases where it is not feasible to fully mitigate project emissions through onsite measures, the project proponent and SJVAPCD may enter into a contractual agreement, i.e., Voluntary Emissions Reduction Agreement (VERA), in which the project proponent agrees to mitigate project-specific emissions by providing funds to the SJVAPCD. (The funds payable would be determined through application of the ISR fee schedule for each ton of pollutant subject to off-site mitigation.) The SJVAPCD's role is to administer the implementation of the VERA consisting of identifying emissions reductions projects, funding those projects and verifying that emissions reductions have been successfully achieved. The types of emission reduction projects that have been funded in the past include electrification of stationary internal combustion engines (such as agricultural irrigation pumps), replacing old heavy-duty trucks with new, cleaner more efficient heavy duty trucks, and replacement of old farm tractors. The SJVAPCD has been successfully developing and implementing VERA contracts with project proponents since 2005. It is the SJVAPCD's experience that implementation of a VERA is a feasible mitigation measure, which effectively achieves the emission reductions by supplying real and contemporaneous emissions reductions measures (SJVAPCD 2015, p. 116-117). (It is noted that while ISR fees are not considered mitigation for CEQA purposes, the payment of fees under a VERA would also be credited toward the ISR fees payable by the project, so there would be no duplication of off-site mitigation.) Therefore, the implementation of feasible onsite emission reduction measures identified above, along with execution of VERAs to provide any additional off-site mitigation needed to reduce emissions to below threshold levels, would be considered by the SJVAPCD to reduce the construction NO_x emissions to acceptable levels. (It is assumed that this would include the necessary reductions for the overlapping construction years when combined emissions would be higher, if any construction periods for SGFs and/or other project elements do in fact overlap.)

The implementation of a combination of on-site and off-site mitigation measures (the latter in the form of VERAs), as required under MM AQ-2, would ensure that emissions of criteria pollutants for each SGF and related project is reduced to below the applicable thresholds of significance for each pollutant. The SJVAPCD CEQA guidance states that "…project specific emissions below the District's offset thresholds will have a less than significant impact on air quality (SJVAPCD 2015, p. 82.) Therefore, with the implementation of the above mitigation measures, the air quality impacts of construction emissions by the WSP solar, gen-tie, and substation projects would be *less than significant*.

Impact AQ-3. Operational Emissions

***Westlands Solar Park*. The emissions from the low-intensity operation and maintenance activities associated with the WSP solar facilities would not exceed applicable thresholds. (*Less-than-Significant Impact*)**

***WSP Gen-Tie Corridors*. The emissions from the low-intensity inspection and maintenance activities associated with WSP gen-tie lines and switchyards would not exceed applicable thresholds. (*Less-than-Significant Impact*)**

This impact analysis addresses significance criteria 'b' and 'c' above.

Westlands Solar Park

Construction is expected to begin in 2018 for SGF 1 and end in 2030 for SGF 12. The first fully operational year after completion of all SGFs is expected to be 2030.

The effect of the full operations of the WSP solar projects on regional air quality was evaluated by predicting associated emissions for 2030, after all projects are completed and operational. The maintenance driveways within all SGFs will be graveled with aggregate base, which would reduce fugitive dust associated with maintenance vehicle trips. In addition, all SGF sites will be revegetated with low growing plants to provide stability to the soil surface and reduce wind erosion. The annual emissions associated with the operation of the completed projects are shown in Table AQ-8.

TABLE AQ-8
UNMITIGATED WSP SOLAR OPERATIONS EMISSIONS SUMMARY

	Operational Emissions - Tons per Year (TPY)								
	NO_x	**CO**	**ROG**	**SO_x**	**PM_{10} Exhaust**	**PM_{10} Fugitives**	**$PM_{2.5}$ Exhaust**	**$PM_{2.5}$ Fugitives**	**CO_2e**
All Site Operations Areas*	0.8	4.0	0.26	0.01	0.028	5.974	0.026	0.605	1069
SJVAPCD Significance Thresholds (TPY)	*10*	*100*	*10*	*27*	*15*	*15*	*15*	*15*	*NA*
Exceeds Threshold	No	No	No	No	No	No	No	No	No

* Operations emissions include both on- and off-site emissions.

Emissions sources include: Worker commutes, site deliveries, onsite vehicle use, onsite portable engine use, offsite paved road fugitives, onsite unpaved road fugitives, GHG emissions from water use. Does not include reductions required under ISR.

Source: Illingworth & Rodkin

Based on the implementation of the requirements of SJVAPCD Rule 9510, the SGF operational emissions, generated primarily by mobile sources, would increase emissions, but they would be well

below all GAMAQI significance thresholds. Therefore, the impact of these increases would be less-than-significant.

Photovoltaic energy projects do not typically include stationary combustion equipment, so no air emissions are anticipated from these sources. If stationary sources are included at a later date, they may require permits from SJVAPCD. Such sources could include combustion emissions from standby emergency generators (rated 50 horsepower or greater). These sources would normally result in minor emissions, compared to those from operations sources shown in Table AQ-8. Sources of stationary air pollutant emissions complying with all applicable SJVAPCD regulations generally will not be considered to have a significant air quality impact. Stationary sources that are exempt from SJVAPCD permit requirements due to low emission thresholds would not be considered to have a significant air quality impact.

As noted, the operational emissions of regional pollutants would not exceed the Air District's CEQA significance thresholds for any pollutant, as shown in Table AQ-8. Therefore, the air quality impacts due to operational emissions by the WSP solar, transmission, and switching station projects would be *less than significant*.

WSP Gen-Tie Corridors

Operational activity associated with the gen-tie lines and related facilities would consist of routine inspections and maintenance, and occasional repairs. These activities would be performed by small crews traveling to and from the tower sites in utility trucks on a periodic basis. This very low intensity of activity related to gen-tie operations would result in negligible emissions of dust or exhaust pollutants. Therefore, the impacts from the operation of the gen-tie lines and related facilities upon air quality would be *less than significant*.

Mitigation Measures for Impact AQ-3:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

Impact AQ-4. Carbon Monoxide Concentrations from Operational Traffic

***Westlands Solar Park*. Mobile emissions generated by WSP operational traffic would increase slightly at intersections in the vicinity; however, resulting CO concentrations would be below ambient air quality standards. (*Less-than-Significant Impact*)**

***WSP Gen-Tie Corridors*. Mobile emissions generated by gen-tie operational traffic would result in a negligible increase in carbon monoxide concentrations at intersections in the vicinity, which would remain well within ambient air quality standards. (*Less-than-Significant Impact*)**

This impact analysis addresses significance criterion 'd' above.

Westlands Solar Park

Operational traffic generated by WSP solar projects would increase concentrations of carbon monoxide along roadways providing access to the SGFs. Carbon monoxide is a localized air pollutant, where highest concentrations are found very near sources. The major source of carbon monoxide is automobile traffic. Elevated concentrations, therefore, are usually only found near areas of high traffic volume and congestion.

Emissions and ambient concentrations of CO have decreased greatly in recent years. These improvements are due largely to the introduction of cleaner burning motor vehicles and reformulated motor vehicle fuels. No exceedances of the State or federal CO standards have been recorded at any of San Joaquin Valley's monitoring stations in the past 15 years. The San Joaquin Valley Air Basin has attained the State and National CO standards.

Despite this progress, localized CO concentrations are still a concern in the San Joaquin Valley and are addressed through the SJVAPCD screening method that can be used to determine with fair certainty whether a project's CO emissions at any given intersection would not cause a potential CO hotspot. A project can be said to have a potential to create a CO violation or create a localized hotspot if either of the following conditions are met: 1) level of service (LOS) on one or more streets or intersections would be reduced to LOS E or F, or; 2) the project would substantially worsen an already LOS F street or intersection within the project vicinity. All roadways in the vicinity that would be affected by WSP operational traffic currently operate at LOS C or better, and are anticipated to continue doing so after full WSP buildout. Since neither of the above threshold conditions would be met, the potential impact on CO would be considered less than significant.

WSP Gen-Tie Corridors

As mentioned, the routine inspections and maintenance of the gen-tie lines and related facilities would be performed by small crews traveling to and from towers sites on a regular basis. Given the dispersed locations of the tower sites and the very low frequency and volume of operational traffic, there is no potential for these operational activities to result in localized CO concentrations that would exceed significance thresholds. Therefore, the impact of transmission operations in terms of contributing to excessive local CO concentrations would be *less than significant.*

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

Impact AQ-5. Exposure of Sensitive Receptors to Toxic Air Contaminants

***Westlands Solar Park*. Diesel exhaust emissions from construction and operational vehicles and equipment would expose nearby receptors to toxic air contaminants; however, given the relatively minor use of heavy equipment for solar project construction, the very small number of nearby sensitive receptors, the relatively short period of construction emissions that would occur in the vicinity of the sensitive receptors, and the very low intensity of solar operations, the overall health risks from toxic air contaminants would not be significant. (*Less-than-Significant Impact*)**

***WSP Gen-Tie Corridors*. Diesel exhaust emissions from construction vehicles and equipment would expose nearby receptors to toxic air contaminants; however, given the dispersed nature of gen-tie line construction, the very small number of nearby sensitive receptors, the very short period of construction emissions that would occur in the vicinity of the nearest sensitive receptors, and the negligible level of operational emissions, the overall health risks from toxic air contaminants would not be significant. (*Less-than-Significant Impact*)**

This impact analysis addresses significance criterion 'd' above.

Westlands Solar Park

Diesel particulate matter (DPM) would be emitted from diesel-fueled vehicles and equipment during construction activities and from vehicle traffic generated by the WSP solar projects while operational. The particulate matter component of diesel exhaust has been classified as a Toxic Air Contaminant (TAC) by CARB based on its potential to cause cancer and other adverse health effects.

The highest daily levels of DPM would be emitted during construction activities from use of heavy-duty diesel equipment such as bulldozers, excavators, loaders, graders and diesel-fueled haul trucks. However, these emissions would be intermittent, vary throughout the WSP plan area, and be of a relatively short duration (about 1-2 years of construction activity for each SGF). In contrast, low-level DPM emissions would result from project operation but they would be constant over the lifetime of the project. Operational DPM emissions could result from the potential use of pickup trucks with a portable water trailer (and pump) which would be used for cleaning solar panels. The panel cleaning is expected to occur up to four (4) times per year.

DPM emissions from construction activities, in the form of PM_{10} exhaust, were estimated using the methods discussed above which are based on an estimated schedule for construction activities (grading, and construction) and types of equipment expected to be used. These emissions are shown in Table AQ-6. The total PM_{10} exhaust construction emissions for any given SGF are very low, with the largest SGFs (250 MW) emitting 0.37 tons per year. This emission rate is very low compared to the SJVAPCD significance threshold of 15 tons per year. Emissions from other vehicles during operations (e.g., employee vehicles and onsite maintenance vehicles) were estimated using emission factors for diesel-fueled vehicles. Those emissions are shown in Table AQ-8. At full WSP buildout, the operations-related PM_{10} exhaust emissions would total 0.028 tons per year for the entire WSP plan area, which is very low compared to the 15 ton per year significance threshold.

Cancer risk, which is the primary adverse effect from exposure to DPM, is based on lifetime exposures. Construction activities would be temporary; however, they could be locally elevated during intense

construction activities. (However, given the minimal grading required for solar facilities, the use of heavy earth moving equipment would be relatively low compared to conventional land development projects.) In general, sensitive receptors are not in close proximity to the SGF construction sites. In addition, the construction sites are quite large, so construction activities at any one area would be relatively brief. There are some rural residences near SGF 10, 11 and 12 (i.e., 20 dwellings at Shannon Ranch and 2 dwellings at Stone Land Company Ranch). For construction near these residences, a potential for cancer risk, while unlikely to be significant, would exist. DPM concentrations dissipate rapidly with distance from the source, decreasing dramatically within 300 feet (Western 2015, p. 4-15), and dropping about 80 percent at approximately 1,000 feet from the source (I&R 2017). Thus emissions from construction activity within 1,000 feet of the receptor locations have the greatest potential to contribute to cancer risk. During construction of SGFs 10, 11, and 12, construction activity would occur within 1,000 feet of the Shannon Ranch complex for a total duration of approximately 3.2 months, compared to a total construction period of about 55 months for the entirety of all three SGFs. The total PM_{10} exhaust emissions from construction of all three of these nearby SGFs would be 1.23 tons, of which approximately 0.07 tons would be generated within 1,000 feet of the Shannon Ranch dwellings. It was noted that the solar PV facilities would require very little grading, so emissions from heavy earthmoving equipment would be relatively low, which is reflected in the low estimated PM_{10} exhaust emissions levels. Another factor that reduces potential cancer risk is that during prevailing wind conditions, the Shannon Ranch is located upwind or crosswind from these three nearest SGFs, so most DPMs are likely to be dispersed away from the ranch instead of toward it. Regarding the two dwellings at the Stone Land Company Ranch, during the 9-month construction period for the nearby SGF 12, construction activity would occur within 1,000 of these residences for about 0.4 months, during which time PM_{10} exhaust emissions would total approximately 0.01 tons.

In addition, these already low emissions of DPM would be further reduced by the application of on-site and off-site mitigation measures for criteria pollutants prescribed in MM AQ-2. Also, since it is anticipated that SGFs 10, 11, and 12 would be constructed toward the end of the WSP buildout period, technical advances in emissions controls for construction equipment are expected to further reduce PM_{10} emissions at the time of construction.

As noted, operational emissions would be very low given the low intensity nature of solar operations. Also, operational emissions would only occur over a 30-year operational life for each SGF, not an entire 70-year exposure period.

As a point of comparison, a recent Health Risk Assessment (HRA) conducted on the 400-MW Tranquillity solar project in Fresno County found the lifetime cancer risk for the maximally exposed receptor to be 2.45 in 1 million. The construction and operational characteristics of the Tranquillity solar project are virtually identical to those of the WSP solar development. The Tranquillity solar project has several sensitive receptors located directly adjacent and downwind of the project site, and therefore represents a worst-case scenario for health risk assessment of large PV solar projects in the San Joaquin Valley. Since atmospheric conditions at the Tranquillity site are also very similar to those of the WSP plan area, the results of the Tranquillity health risk assessment are directly transferable to WSP solar development. Based on this comparison, it is reasonable to conclude that the increased lifetime cancer risk for the nearest sensitive receptors at the Shannon Ranch and the Stone Ranch Land Company resulting from the WSP solar development and operation, would be well below the 20 in 1 million significance threshold.

In summary, given the relatively minor use of heavy equipment for solar project construction, the very small number of nearby sensitive receptors, the relatively short period of construction emissions that would occur in the vicinity of the sensitive receptors, and the very low intensity of solar operations, the health risks from toxic air contaminants to the nearest sensitive receptors would not be significant. Therefore, no long-term health risks are anticipated, and the potential impacts of WSP solar development in terms of health risk from toxic air contaminants would be *less than significant*.

WSP Gen-Tie Corridors

As is the case for WSP solar projects, diesel particulate matter (DPM) would be emitted from diesel-fueled vehicles and equipment during construction of the gen-tie projects and related facilities. Operational emissions would be negligible due to the very low intensity of inspection and maintenance activities associated with gen-tie lines and related facilities, as discussed above.

As described under "Sensitive Receptors" above, there are a total of 10 sensitive receptors (all residences) located within 1,000 feet of the southern gen-tie corridors. There are no residences within 1,000 feet of the northern gen-tie corridor. The nearest 10 residences, located along Nevada and Jayne Avenues, are situated 125 feet to 180 feet from the corridor boundary. It is anticipated that nearest transmission towers would be located approximately 300 feet from the nearest dwelling at the Stone Land Company Ranch and 400 feet from the nearest of the 8 dwellings on the south side of Jayne Avenue. Also few if any new access driveways would need to be constructed, given that all tower sites would be readily accessible from the adjacent county roads. It is expected that staging areas would be located well away from any existing residences. The planned locations of the two WSP switching stations are located at least 2 miles and 3 miles from the nearest residences, respectively.

Construction of the gen-tie towers would proceed quickly. The total time required at each tower site for clearing, grading, excavation of footings, and tower assembly and erection, and clean up, would be 1 to 2 weeks. The area subject to temporary grading at each tower site would be approximately one acre, so the duration of grading equipment operation would be brief. Similarly, the time required for auguring holes for the concrete footings at each tower site would also be short.

The maximally exposed sensitive receptor along Nevada and Jayne Avenues would be 300 feet or more away from the nearest tower site. However, even under worst-case conditions with the nearest tower placed in proximity to the maximally exposed receptor, the total duration of nearby construction could be up to two weeks, but likely much shorter, with total operating time for diesel equipment shorter still. Construction of other towers and access driveways in the vicinity would occur at least 800 feet away and farther. At this distance, most diesel particulates would be dispersed and concentrations reaching the receptor would be low. Operational emissions would be negligible given the very low frequency of inspection and maintenance activities that would take place at the nearest tower. The very low level of exhaust emissions associated with construction of the transmission projects and related facilities is indicated by the low levels of PM_{10}/$PM_{2.5}$ (as exhaust) shown in Table AQ-6. As shown, the total annual emission of exhaust particulate matter is calculated to be 0.42 tons for the Southern Gen-Tie, and 0.17 tons for the Northern Gen-Tie (for which emissions are lower due to its later construction year when equipment will have lower emissions), both of which are well below the significance threshold of 15 tons per year.

Given the very brief duration of construction that would occur at the nearest residential receptor, and considering the negligible operational emissions, and the lifetime exposure period considered in

evaluating cancer risk, it is expected that the increased cancer risk at the maximally exposed receptor would be very low and would be well below the risk threshold of 20 in 1 million. Therefore, the overall health risk due to emissions of diesel particulate matter from construction of the transmission projects and related facilities would be *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

Impact AQ-6. Odors

***Westlands Solar Park*. The WSP solar projects would temporarily generate odors during construction. (*Less-than-Significant Impact*)**

***WSP Gen-Tie Corridors*. The construction of the WSP gen-tie projects and related facilities would temporarily generate odors during construction. (*Less-than-Significant Impact*)**

This impact analysis addresses significance criterion 'e' above.

Westlands Solar Park

During construction, the various diesel-powered vehicles and equipment in use onsite would create localized odors. These odors would be temporary and would dissipate relatively quickly and thus would not likely to be noticeable for extended periods of time much beyond the boundaries of the WSP solar projects. Most if not all diesel odors carried off-site would disperse into the atmosphere before reaching the nearest sensitive receptors. Therefore, potential for diesel odor impacts to occur as a result of WSP solar development is *less than significant*.

During project operations, the WSP solar facilities are not expected to generate any objectionable odors. Therefore, the odor impacts associated with SGF operations would be *less than significant*.

WSP Gen-Tie Corridors

As discussed for WSP solar development above, the odors generated by diesel exhaust during construction of the gen-tie projects and related facilities would largely dissipate before reaching the nearest receptors. The potential for odor generation during operations would be negligible. Therefore, the potential for odor impacts to occur as a result of the WSP gen-tie projects and related facilities would be *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

Impact AQ-7. Consistency with Clean Air Planning Efforts

***Westlands Solar Park*. The WSP solar development would not conflict with the current clean air plan or obstruct its implementation. (*Less-than-Significant Impact with Mitigation*)**

***WSP Gen-Tie Corridors*. The construction of the WSP gen-tie projects and related facilities would not conflict with the current clean air plan or obstruct its implementation. (*Less-than-Significant Impact*)**

This impact analysis addresses significance criterion 'a' above.

Westlands Solar Park

The SJVACPD's CEQA guidance states that projects with emissions below the thresholds of significance for criteria pollutants would be determined to not conflict with or obstruct implementation of the District's air quality plan (SJVAPCD 2015, p. 65.) As discussed under Impact AQ-2, it is calculated that the emissions of criteria pollutants for the SGF projects would exceed some significance thresholds prior to mitigation, but that implementation of MM AQ-2 would result in reduction of emissions levels to below the applicable thresholds of significance. Therefore, the construction of the SGF projects, as mitigated by the measures specified in MM AQ-2, would not conflict with or obstruct implementation of efforts outlined in the region's air pollution control plans to attain or maintain ambient air quality standards. Since the WSP solar development, as mitigated, would therefore be consistent with clean air planning efforts, the impact would *less than significant with mitigation*.

WSP Gen-Tie Corridors

The SJVACPD's CEQA guidance states that projects with emissions below the thresholds of significance for criteria pollutants would be determined to not conflict with or obstruct implementation of the District's air quality plan (SJVAPCD 2015, p. 65.) As discussed under Impact AQ-2, it is calculated that the emissions of criteria pollutants for the gen-tie projects and related switchyards would be well below the applicable significance thresholds. As such, the air quality impacts associated with gen-tie line construction would be less than significant and would not conflict with or obstruct implementation of clean air plans, and the impact in this regard would be *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. Implement MM AQ-2.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

Impact AQ-8. Greenhouse Gas (GHG) Emissions

***Westlands Solar Park*. The WSP solar projects would generate greenhouse gas emissions, either directly or indirectly, during construction and operation. However, the GHG emissions resulting from WSP solar development would be very small compared to the substantial net benefit to global climate change resulting from the clean power generation provided. (*Less-than-Significant Impact*)**

***WSP Gen-Tie Corridors*. The WSP gen-tie projects would generate greenhouse gas emissions, either directly or indirectly, during construction and operation. However, the GHG emissions resulting from the gen-tie projects would be very small compared to the substantial net benefit to global climate change that would occur due to the delivery of renewable power that would be enabled by the gen-tie projects. (*Less-than-Significant Impact*)**

This impact analysis addresses significance criterion 'f' above.

Introduction

The emission of greenhouse gases (GHG) from many sources over long periods of time has resulted in, and continues to contribute to, global warming and climate change. The effects of climate change include: melting polar ice caps, sea level rise, increased coastal flooding, increased frequency and severity of extreme weather events, habitat disruption, and other adverse environmental effects. It is generally accepted that individual development projects, in and of themselves, are too small to have a perceptible effect on global climate. However, the GHG emissions from each development project results in an incremental contribution to global warming and climate change. The geographic scope of climate change is global, and the cumulative emissions of GHGs globally have resulted in cumulatively significant climate change impacts. Thus, in CEQA terms, GHG emissions associated with individual development projects are by nature cumulative in their effects. As such, a significant impact would occur if the GHG emissions associated with a project represent a considerable contribution to the cumulatively significant impacts resulting from global climate change.

Westlands Solar Park and WSP Gen-Tie Corridors

The WSP solar and gen-tie projects would directly generate greenhouse gas emissions during construction, and routine operational and maintenance activities. The three GHGs associated with the project, i.e., 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. Estimated greenhouse gas emissions from construction and operational activities are shown in Tables AQ-6 and AQ-8 above. Another GHG gas that would be used at the solar projects is sulfur hexafluoride (SF_6) which would be used as a gas insulator in switchgear at on-site substations during project operations. Older switchgear, manufactured before 1999, is prone to leaking SF_6 into the atmosphere. Newer switchgears have a very low leak rate and are subject to CARB regulations which provide for leak prevention methods to reduce emissions to levels consistent with the AB 32 Scoping Plan. As such, the potential for emissions of SF_6 from WSP solar projects is considered negligible.

The WSP solar and gen-tie projects would emit a total of 115,617 metric tons of CO_2e (Carbon Dioxide equivalents) over their estimated 30-year operational lifetimes. (Note: Since the first SGF would begin operation in 2018 and the last SGF would begin operation in 2030, the collective life of the WSP solar

facilities would be about 43 years, although individual solar facilities are assumed to have useful lives of 30 years.) Construction emissions, at 83,442 metric tons of CO_2e, represent 71 percent of total CO_2e, while operational emissions, at 32,175 metric tons of CO_2e, represent 29 percent of total CO_2e. The total CO_2e emissions annualized over the lives of the projects (30 years each) is equivalent to 3,851 metric tons per year of CO_2e for the entire WSP plan area. The GHG emissions associated with SGF decommissioning would be equivalent to approximately 75 percent of construction emissions (Kings County 2012). However, since many of the materials salvaged from deconstruction would be recyclable or reusable, these emissions would be largely offset by the avoided emissions associated with the manufacture of future equipment and components from virgin materials.

Upon completion, the 2,000 MW generated at the Westlands Solar Park would deliver approximately 5 million megawatt-hours per year (MWh/yr) of electricity to the grid. This electric power would be dispatched to the California Independent System Operator (CAISO) in accordance with a complex and dynamic formula that takes into account numerous variables in ongoing dispatching decisions to meet demand for electricity at any given time. One of those variables is compliance with the mandate to integrate electricity generated from renewable sources into the system at a predetermined rate, i.e., 50 percent by 2030 as mandated by the current California Renewables Portfolio Standard (RPS). Since fossil fuel sources are typically less expensive and more reliable than renewable sources at the utility scale, it is expected that in the absence of an RPS mandate, these fossil sources would continue to be the dominant fuel source for electrical generation in California. Thus renewable sources of electricity, such as solar generation, are considered to offset an equivalent amount of generation from other fuel sources, such as natural gas or coal, which would likely otherwise be dispatched by the CAISO in the absence of an RPS mandate. In other words, the installation and operation of solar facilities, such as those at the Westlands Solar Park, would result in a net reduction of fossil-based generation, and hence a net reduction in CO_2 emissions, relative to overall CO_2 emissions that would occur without the WSP solar projects.

In order to quantify the amount of net reduction in CO_2 emissions that would be represented by the WSP solar and gen-tie facilities, the CO_2 emissions from fossil-fueled plants with the same electrical output were considered for comparison. For example, a large combined cycle natural gas power plant rated at approximately 660 MWs is estimated to emit approximately 1.92 million metric tons/yr of CO2e. Scaled up to a 2,000 MW facility, the CO2e emissions would be approximately 5.82 million metric tons/yr. The total annual GHG emissions of 3,854 $MTCO_2e$ from WSP solar and gen-tie facilities would be 99.93 percent less than emissions from a fossil fueled plant with comparable generating capacity.

The emissions reductions associated with typical land development projects, such commercial or residential projects, can be quantified because business-as-usual baseline conditions can be readily established. For renewable solar PV projects, no baseline of business-as-usual condition has been established, so there is no way to measure emissions reductions against the SJVAPCD 29 percent reduction target for land development projects. However, as an electrical generating facility, it is reasonable to assume that in a business-as-usual scenario without AB 32 and RPS mandates, natural gas-fueled electrical generation would be favored over renewable generation given the comparative cost and reliability advantages of natural gas generation. Thus the natural gas power plant described above would reasonably represent BAU, and the WSP emissions reduction of over 99 percent would more than satisfy the 29 percent reduction target of the SJVAPCD.

In summary, the WSP solar facilities would result in a substantial reduction in GHG emissions compared to fossil-fueled power generation that would likely be dispatched in the absence of the RPS mandates.

Thus, while a relatively small amount of GHG emissions would occur during construction and operation of WSP solar facilities, the net effect would be beneficial in terms of impacts to global climate change. Therefore, the impact of a relatively small amount of GHG emissions resulting from WSP solar projects would be *less than significant*.

The primary purpose of the WSP gen-tie projects is to facilitate delivery of renewable generation to the grid, thus helping to reduce dependency on fossil-fueled generation. As such, the GHG emissions associated with the transmission projects are viewed in the context of the benefit provided by indirectly offsetting conventional nonrenewable generation sources. By enabling the delivery of 2,000 MW of solar generated power to the grid, the gen-tie projects would facilitate the reduction of 5.82 Million $MTCO_2e$ of annual GHG emissions that would otherwise be emitted from natural gas generation facilities with the same electrical output. As discussed for the WSP solar generating facilities above, the relatively small amount GHG emissions resulting from construction and operation of the gen-tie projects would be far outweighed by the amount of GHG emissions that would be avoided by their implementation. Therefore, the transmission projects would have a substantial net benefit in terms of GHG emissions, and the impact to global climate change would be *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

Impact AQ-9. Consistency with GHG Reduction Plans and Policies

***Westlands Solar Park*. The WSP solar projects would help achieve the state's GHG reduction plans and policies, and would not conflict with their implementation. (*Less-than-Significant Impact*)**

***WSP Gen-Tie Corridors*. The WSP gen-tie projects would help achieve the state's GHG reduction plans and policies, and would not conflict with their implementation. (*Less-than-Significant Impact*)**

This impact analysis addresses significance criterion 'g' above.

Westlands Solar Park and WSP Gen-Tie Corridors

The Climate Change Scoping Plan adopted by the California Air Resources Board outlines the strategies for achieving the AB 32 emissions reduction targets. One of the key strategies is the Renewables Portfolio Standard (RPS), which requires all electric utilities in California to include a minimum of 33 percent renewable generation sources in their overall energy mix by 2020, and a minimum of 50 percent renewables by 2030. The solar photovoltaic generating facilities in the WSP would increase the proportion of renewables in the statewide energy portfolio, thereby furthering the implementation of RPS by the target year instead of hindering or delaying its implementation. The WSP solar generation increases the state's electrical supply and eases the retirement of existing older fossil-fueled generation plants. This resource shift avoids or offsets those sources of GHG emissions. Therefore, the impact of

WSP solar facilities in terms of conflicting with a plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases would be *less than significant*.

The primary purpose of the WSP gen-tie projects is to deliver renewable energy to the grid. In doing so, the transmission projects would help facilitate achievement of the state's AB 32 reduction targets, specifically by assisting in meeting the state's RPS mandate. Therefore, the impact of Westlands transmission projects in terms of conflicting with a plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases would be *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

Cumulative Impacts

Impact AQ-10. Cumulative Air Quality and Climate Change Impacts

***Westlands Solar Park*. Upon mitigation for air quality impacts associated with WSP solar development and other cumulative projects in the vicinity, the cumulative air quality impacts would be less than significant, and the contribution from WSP solar development would be not cumulatively considerable. (*Less-than-Significant Cumulative Impact with Mitigation*)**

***WSP Gen-Tie Corridors*. Upon mitigation for air quality impacts associated with other cumulative projects in the vicinity, the cumulative air quality impacts would be less than significant, and the contribution from WSP gen-tie projects would be not cumulatively considerable. (*Less-than-Significant Cumulative Impact*)**

Geographic Scope of Cumulative Impacts

The study area for cumulative air quality impacts is variable depending on the pollutant under consideration. For example, the study area for local pollutants such as Toxic Air Contaminants (TACs) extends a short distance from the project boundaries, while regional criteria pollutants such as NOx and ROG are basin-wide in their effects, and GHGs affect climate on a global scale. As such, each category of pollutants is discussed below in terms of the geologic scope that is applicable to that category.

Westlands Solar Park

Near-Term

Under near-term conditions, there are four approved and pending solar PV projects or groups of projects on lands adjacent to the WSP plan area, as listed below. (Note: The Westside Solar project and Westlands Aquamarine solar project, shown in Figure PD-9, are located within the WSP plan area. However, since the impacts associated with these projects are addressed in the WSP impact analysis, they are not included again in the list of cumulative projects below.) These solar projects are shown in Figure PD-9 and described in Table PD-9, in Chapter *2. Project Description*.

- Mustang/Orion/Kent South
- American Kings Solar
- Mustang 2 Solar
- Kettleman Solar

While there are other cumulative projects in the region, as listed in Tables 9 and 10, these projects are too far from WSP to contribute to a cumulative impact in terms of localized pollutants, and cumulative impacts for regional pollutants would not be significant per SJVAPCD criteria, as discussed in the next paragraph.

Regarding regional criteria pollutants, SJVAPCD guidance indicates that cumulative impacts for ozone precursors ROG and NOx would be considered significant only if the project-specific emissions exceed the applicable SJVAPCD significance thresholds, or if the project is not consistent with the regional clean air plan. As discussed in Impact AQ-2 above, project-specific emissions of ROG) and PM_{10} were found to be less-than-significant, and that emissions of NOx were found to be less than significant after implementation of MM AQ-2. As discussed under Impact AQ-7 above, the WSP solar projects would be consistent with clean air planning efforts and would not conflict with or obstruct their implementation, with mitigation incorporated (i.e., implementation of MM AQ-2). Therefore, the project contribution to cumulative regional air quality impacts in the near term would be would be *less than significant with mitigation*.

Emissions of PM_{10} and $PM_{2.5}$ during construction would be local in their effects. As shown in Table AQ-6 above, the PM_{10} dust emissions from the WSP projects would exceed the PM_{10} significance threshold of 15 tons without dust controls specified in MM AQ-1, which would reduce emissions to less-than-significant levels. As shown in Table AQ-7, the PM_{10} construction exhaust from the WSP solar projects would be well below the PM_{10} significance threshold of 15 tons, and therefore would be less than significant. As mentioned, there are four other approved solar projects in the immediate WSP vicinity, of which two have been completed (Mustang/Orion/Kent South, Kettleman), and two have not yet commenced construction (American Kings, Mustang 2). Depending on construction schedules, the construction of the one or more SGFs in Westlands Solar Park could overlap with the construction of one or more of these other proximate solar projects. By the time the first WSP solar project commences construction, it is assumed that the American Kings and Mustang 2 projects may be under construction at the same time as the first WSP solar project. As with the WSP solar projects, the PM_{10} exhaust emissions at each cumulative project would be very low, and even when combined would not exceed the applicable threshold. The implementation of dust control measures required for each project under SJVAPCD Regulation VIII (as specified in MM AQ-1 above for the WSP projects) would reduce PM_{10} emissions from each of these projects to below the 15 ton per year significance threshold. It is possible

that the combined PM_{10} emissions from the American Kings, Mustang 2, and first WSP solar project could exceed 15 tons per year of total PM_{10} (i.e., fugitive dust plus exhaust emissions) although the 15 ton threshold for exhaust component of PM_{10} would not be exceeded. Where PM_{10} dust emissions from unrelated projects may occur, the SJVAPCD would employ a qualitative approach to determine if enhanced dust suppression measures may be necessary. The need for enhanced dust control would be determined by the SJVAPCD on a case-by-case basis in conjunction with its review and approval of the Dust Control Plans for each project. This process would ensure that cumulative PM_{10} emissions would be less than significant.

In considering the geographic extent of TAC impacts, it is important to note that DPM concentrations diminish rapidly from the source. Pollutant dispersion studies have shown that there is about an 80 percent drop off in DPM concentrations at approximately 1,000 feet from the source. Therefore, only projects under construction in the immediate vicinity of the WSP would have the potential to contribute to a cumulative TAC impact. As discussed above, the American Kings and Mustang 2 solar projects may be under construction at the same time as the first WSP solar project. The first SGF in WSP (i.e., SGF 1) is expected to be constructed in the northeast corner of the WSP plan area, which is directly south of the American Kings and Mustang 2 projects. As such, all three projects could potentially contribute to emissions of TACs at the same time. The multiple sources of DPM emissions must all be proximate to a receptor to have an additive effect to DPM concentrations at the receptor site. The nearest residential receptors to the SGF 1 site are located 2.5 miles southwest (Shannon Ranch) and 2.5 miles north (residences at NAS Lemoore). The nearest residential receptors to the Mustang 2 site are located 1.3 miles east (rural residence) and 2.0 miles north (residences at NAS Lemoore). The nearest residential receptors to the American Kings site are located 350 feet north (residences at NAS Lemoore). Although the residences at NAS Lemoore may be temporarily subject to DPM emissions from nearby construction at the American Kings project, it is not expected that this would result in significant increase in lifetime cancer risk to the affected residents. The DPM emissions from the SGF 1 and Mustang 2 projects would be too far from these receptors to make any contribution to the DPM exposure at NAS Lemoore since most if not all DPM emissions from these projects would disperse into the atmosphere before reaching these receptor locations. All of the other nearest residential receptors are at least one mile from any of the three projects, distances at which DPM concentrations would be negligible. Therefore, cumulative emissions of DPM or TACs are not anticipated to result in a significant increase in risk to exposed persons. As such, the cumulative impact in terms of health risk would be *less than significant*, and the project contribution would be *not cumulatively considerable*.

With respect to climate change impacts, the overall effects of GHG emissions are considered to be cumulatively significant only at the global level, and project-level impacts are considered significant if a project makes a considerable contribution to the cumulative impact. As discussed, the construction and operation of the WSP solar projects would generate some greenhouse gas emissions from fossil-fueled vehicles and equipment; however, these emissions would be more than offset by the avoided greenhouse gas emissions resulting from the WSP projects' renewable electricity generation. Since all of the cumulative projects are also solar PV generating facilities, they would each result in a net benefit to climate change by offsetting an equivalent amount of fossil-fueled power generation. Thus none of the cumulative projects, including the WSP solar projects, would make a considerable contribution to the cumulative climate change impact. Therefore, the cumulative impact to climate change would be *less than significant*, and the project contribution would be *not cumulatively considerable*.

In summary, the near-term cumulative impact to air quality associated with WSP solar development would be *less than significant with mitigation (i.e., for fugitive dust and NOx emissions during construction)*.

Far-Term

To evaluate far-term conditions, the cumulative analysis of air quality impacts considers the full buildout of land uses in the vicinity of the WSP plan area as shown on the 2035 Kings County General Plan and the Fresno County General Plan (which covers lands immediately to the west). The 'Kings County Land Use Map' of the Land Use Element shows that Kings County lands near the WSP plan area are designated as either 'General Agriculture 40 ac.' or 'Exclusive Agriculture 40 ac.' Similarly, the Fresno County General Plan shows the lands near the WSP plan area are designated 'Agriculture.' Thus it is reasonable to assume that agricultural production will remain the dominant land use in surrounding lands for the life of the General Plans.

It is important to note that, as with the lands of the WSP plan area, the agricultural designations of the 2035 Kings County General Plan allow the installation of utility-scale PV solar generating facilities (Kings County 2010). Thus it is possible that additional solar development projects could be proposed in the WSP vicinity within the 25 year planning horizon of the General Plan. Since the adjacent lands to the west of the WSP site are located within Fresno County, the corresponding General Plan designations for Fresno County lands would guide permitted uses on adjacent lands to the west. While the Fresno County General Plan does not specifically allow PV solar development on agriculturally-designated lands, the County has initiated a process for considering solar PV development on agriculturally-designated lands, and has approved a number of solar PV projects under this process (Fresno County 2011). Although few solar projects have been proposed, approved, or constructed in the southwestern Fresno County to date (e.g., Westlands Solar Farm, PG&E's Gates Solar, PG&E's Huron Solar), it is reasonable to assume that Fresno County would consider proposals for PV solar development on agricultural lands near the WSP plan area. Thus it is anticipated that any development on nearby lands would consist predominantly, if not exclusively, of solar PV projects.

As discussed for near-term conditions above, cumulative impacts would be considered significant only if the project-specific emissions for ozone precursors ROG and NOx exceed the applicable SJVAPCD significance thresholds, or if the project is not consistent with the regional clean air plan. As discussed in Impact AQ-3 above, WSP solar project emissions of ROG and PM_{10} were found to be less-than-significant, and emissions of NOx were found to be less than significant after implementation of MM AQ-2. . As discussed under Impact AQ-7 above, the WSP solar projects would be consistent with clean air planning efforts and would not conflict with or obstruct their implementation, with mitigation (i.e., implementation of MM AQ-2). In the far term, emissions rates for criteria pollutants will be substantially lower than in the near term due to mandated increases in fuel efficiency and technical advances in emissions control. Given these anticipated reductions in emission rates, it is unlikely that even the largest WSP solar project constructed in the far term would exceed the significance thresholds for regional pollutants. Therefore, the project contribution to cumulative regional air quality impacts in the far term would be *not cumulatively considerable* and the project's cumulative impacts would be *less than cumulatively significant*.

Emissions of PM_{10} and $PM_{2.5}$ during construction would be local in their effects. As shown in Table AQ-6 above, the PM_{10} dust emissions from the WSP projects would exceed the PM_{10} significance threshold of 15 tons without dust controls specified in MM AQ-1, which would reduce emissions to less-than-

significant levels. As shown in Table AQ-7, the PM_{10} construction exhaust from the WSP solar projects would be well below the PM_{10} significance threshold of 15 tons, and therefore would be less than significant. Assuming that other currently unforeseen solar PV projects would be proposed for lands adjacent to the WSP plan area in the far term, the PM_{10} exhaust emissions would be very low, and implementation of dust control measures required for such projects under SJVAPCD Regulation VIII (and MM AQ-1 for WSP projects) would reduce PM_{10} emissions from each such project to below the 15 ton per year significance threshold. (Although large reductions in exhaust pollutant emission rates are mandated and expected to be in effect in the far term, it is not expected that dust emissions from construction will be reduced substantially in the far term compared to reductions achievable with current dust controls.) It is possible that the combined PM_{10} emissions from future projects and the final WSP solar projects could exceed 15 tons per year, although the 15 ton threshold for exhaust component of PM_{10} would not be exceeded. As noted above, where PM_{10} emissions (as fugitive dust) from unrelated projects may occur, the SJVAPCD would employ a qualitative approach to determine if enhanced dust suppression measures would be necessary. The need for enhanced dust control would be determined by the SJVAPCD on a case-by-case basis in conjunction with its review and approval of the Dust Control Plans for each project. This process would ensure that cumulative PM_{10} emissions would *be less than significant* in the far term, but with mitigation incorporated in the form of dust controls.

In considering the geographic extent of TAC impacts, it is important to note again that DPM concentrations diminish rapidly from the source. Therefore, only projects under construction in the immediate vicinity of the WSP would have the potential to contribute to a cumulative TAC impact. Under worst case conditions in the far term, one or more future solar PV projects could be proposed on adjacent lands to the east or south of the WSP plan area, near receptors at Shannon Ranch or the Stone Land Company Ranch. However, as discussed in Impact AQ-5 above, even where sensitive receptors are virtually surrounded by solar development projects, the TAC levels at the maximally exposed receptors would not rise to the level of a significant health risk. Given the mandated reductions in emissions rates from diesel equipment, the TAC emissions in the far term are expected to be significantly lower than current emissions rates, thus lowering the health risk even further. Therefore, cumulative emissions of DPM or TACs in the far term are not anticipated to result in a significant increase in risk to exposed persons. As such, the far-term cumulative impact in terms of health risk associated with WSP solar development would be *less than significant*.

With respect to climate change impacts, the overall effects of GHG emissions are considered to be cumulatively significant only at the global level, and project-level impacts are considered significant if a project makes a considerable contribution to the cumulative impact. As discussed under Impact AQ-8, the construction and operation of the WSP solar projects would generate some greenhouse gas emissions from fossil-fueled vehicles and equipment; however, these emissions would be more than offset by the avoided greenhouse gas emissions resulting from the WSP projects' renewable electricity generation. Since cumulative projects would also likely consist exclusively of solar PV generating facilities, they would each result in a net benefit to climate change by offsetting an equivalent amount of fossil-fueled power generation. Thus none of the cumulative projects, including the WSP solar projects, would make a considerable contribution to the cumulative climate change impact in the far term. Therefore, the cumulative impact to climate change in the far term would be *less than significant*, and the project contribution would be *not cumulatively considerable*.

In summary, the far-term cumulative impact to air quality and climate change associated with WSP solar development would be *less than significant with mitigation (i.e., construction dust controls)*.

WSP Gen-Tie Corridors

Near Term

Under near-term conditions, there is one pending solar project and two planned transmission projects on lands adjacent or proximate to the WSP gen-tie corridors under near-term conditions. These projects are shown of Figures PD-10, and briefly described in Table PD-10, in Chapter *2. Project Description*.

- EC&R Solar Project
- Central Valley Power Connect (CVPC)(Gates to Gregg Transmission Project)
- Westside Transmission Project (Gates to Dos Amigos/Los Banos Substation)

It is noted that the CVPC transmission project has been placed on hold and may not move forward. However, for purposes of this analysis, it is considered an active pending project and thus is included in this cumulative analysis. As discussed above, cumulative impacts for regional criteria pollutants would be considered significant only if the project-specific emissions exceed the SJVAPCD significance thresholds for ozone precursors ROG or NOx, or if the project is not consistent with the regional clean air plan. As discussed under Impacts AQ-2 and AQ-3 above, project-specific emissions of ozone precursor pollutants (ROG and NOx) and PM_{10} during both construction and operation were found to be less-than-significant, without mitigation. As discussed under Impact AQ-7 above, the WSP gen-tie projects and related facilities would be consistent with clean air planning efforts and would not conflict with or obstruct their implementation. Therefore, the project contribution to cumulative regional air quality impacts in the near term would be *not cumulatively considerable* and the cumulative impacts associated with the transmission and related projects would be *less than significant*.

Emissions of PM_{10} and $PM_{2.5}$ during construction would be local in their effects. As shown in Table AQ-6 above, the PM_{10} construction exhaust from the WSP gen-tie projects would be well below the PM_{10} significance threshold of 15 tons, and the PM_{10} dust emissions from the gen-tie projects would also be well below the PM_{10} significance threshold of 15 tons. As listed above, there is one solar project and two planned transmission projects in the immediate vicinity of the WSP gen-tie corridors. Depending on construction schedules of the other projects, the WSP gen-tie projects could overlap with the construction of one or more of these other proximate projects. If one or more of these other projects are constructed concurrently with the WSP gen-tie projects, it is unlikely that the combined PM_{10} emissions (i.e., fugitive dust and exhaust) from the nearby projects, including the WSP gen-tie projects, would exceed 15 tons per year. Given the far-flung and low intensity nature of transmission line construction, the cumulative transmission projects would result in very low PM_{10} emissions. The one cumulative solar project may result in PM_{10} dust emissions that exceed 15 tons per year, but the impact would be reduced to less-than-significant levels through implementation of SJVAPCD Regulation VIII (which would be required even if Fresno County did not specifically require it as a CEQA mitigation measure). Therefore, cumulative PM_{10} emissions would be less than significant. In any event, the contribution of the PM_{10} emissions from the gen-tie projects would not be cumulatively considerable and would therefore not require mitigation for cumulative impacts.

In considering the geographic extent of TAC impacts, it is noted again that DPM concentrations diminish rapidly from the source, decreasing by about 80 percent at approximately 1,000 feet from the source. Therefore, only projects under construction in the immediate vicinity of the WSP gen-tie projects would have the potential to contribute to a cumulative TAC impact. As discussed above under Impact AQ-5 above, the construction of the gen-tie projects would be focused on the transmission towers which

would be placed about 1,300 feet apart, on average. Construction activity would move quickly along the transmission corridors, and the duration of construction at any one tower site would be brief, about 1 to 2 weeks. This low intensity of the construction activity is reflected in the very low levels of PM_{10} emissions (as exhaust) shown in Table AQ-6. As discussed under Impact AQ-5, the maximally exposed receptor along the WSP gen-tie corridors would be exposed to very low TAC levels, which would be far below the levels indicative of a significant health risk. The only potential situation where a WSP gen-tie project would be constructed near one of the other cumulative transmission projects is if the northern WSP gen-tie project were to be constructed at the same time as the adjacent segment of the Gates to Gregg transmission project (Central Valley Power Connect), or the adjacent EC&R solar project. The northern gen-tie corridor would run parallel and one of the alternative routes for the adjacent CVPC transmission project along its entire 11.5-mile corridor. There are 10 rural residences located between 0.3 and 0.9 miles from this corridor, with the nearest residence located 1,600 feet from the northern gen-tie corridor. At these distances, the DPM concentrations would dissipate to very low levels. Thus the TAC emissions from construction of the nearest transmission tower to the common receptor, combined with the TAC emissions from construction of an adjacent transmission project, would be far below the significance level that defines a significant health risk. If the western portion of the northern gen-tie line were to be constructed at the same time as the nearby portions of the EC&R solar project, there is a potential for both projects contribute to cumulative TAC levels. However, the nearest common residential receptor is located 1,200 feet from the northern gen-tie corridor and 400 feet from the nearest portion of the EC&R project site. Given the distance from this receptor site to the northern gen-tie site, and the very brief duration of construction along the nearest segment of the gen-tie line, there is little or no potential for the gen-tie construction to contribute to a cumulative TAC impact. Therefore, the cumulative health risk due to emissions of diesel particulate matter from construction of the WSP gen-tie projects in the near term would be *less than significant*.

With respect to climate change impacts, the overall effects of GHG emissions are considered to be cumulatively significant only at the global level, and project-level impacts are considered significant if a project makes a considerable contribution to the cumulative impact. As discussed under Impact AQ-8, the construction and operation of the WSP gen-tie projects would generate low levels of greenhouse gas emissions from fossil-fueled vehicles and equipment; however, these emissions would be more than offset by the renewable energy that would be delivered by the gen-tie projects to the grid to offset fossil-fueled generation. As such, the WSP gen-tie projects would result in a net benefit to global climate. The cumulative projects consist of other transmission projects, which would generate relatively small amounts of GHGs during construction and negligible GHGs during operation. Therefore, the contributions of the gen-tie projects would *not be cumulatively considerable* on an individual basis, and therefore the cumulative climate change impact associated with the WSP gen-tie projects in the near-term would be *less than significant*.

In summary, the near-term cumulative impact to air quality and climate change associated with the WSP gen-tie projects would be *less than significant*.

Far Term

Under far-term conditions, it is assumed that all of the near-term cumulative projects, including the WSP gen-tie projects, would be completed. As discussed, all adjacent and nearby lands are designated for agricultural uses in the county general plans. While both counties allow solar PV projects on agriculturally-designated lands, it is not foreseeable which lands, if any, adjacent to the gen-tie corridors will be proposed for solar PV development in the far term. Also, additional transmission facilities or other public

utility uses could be planned for adjacent lands, but the details of any such projects are also unforeseeable at this time. However, this far-term analysis assumes that some solar PV development and additional transmission projects will be constructed in the project vicinity in the far term. However, it is not anticipated that other non-agricultural development would occur in the vicinity of the Westlands transmission corridors under far-term conditions.

Given the relatively low intensity of the construction and operational activity associated with the cumulative development anticipated in the far term, i.e., solar projects and transmission projects, the emissions of air pollutants and greenhouse gases are also expected to be very low. The far-term cumulative projects would not be expected to exceed any thresholds of significance for air quality, either individually or cumulatively. As such, the far-term cumulative impacts to air quality and climate change associated with the WSP gen-tie projects would be *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. No additional mitigation is required. (Implement MM AQ-1 and MM AQ-2.)**

***WSP Gen-Tie Corridors*. No mitigation is required.**

REFERENCES/BIBLIOGRAPHY – AIR QUALITY AND CLIMATE CHANGE

CARB 2016 — California Air Resources Board (CARB). 2016. *Air Quality Data Statistics*. http://www.arb.ca.gov/adam/index.html

CARB 2017 — California Air Resources Board (CARB). 2017. *The 2017 Climate Change Scoping Plan Update – The Proposed Strategy for Achieving California's 2030 Greenhouse Gas Target*. January. *https://www.arb.ca.gov/cc/scopingplan/2030sp_pp_final.pdf*

Fresno County 2000 — Fresno County. 2000. *Fresno County General Plan*. October. http://www2.co.fresno.ca.us/4510/4360/General_Plan/GP_Final_policy_doc/Table_of_Contents_rj_blue.pdf

I&R 2017 — Illingworth & Rodkin (I&R). 2017. *Westlands Solar Park and Gen-Tie Corridors – Program-Level Air Quality Assessment, Kings County, California*. September. [Contained in Appendix C of this EIR.]

Kings County 2010 — Kings County. 2010. 2035 *Kings County General Plan*. Adopted January 26, 2010. http://www.countyofkings.com/home/showdocument?id=3106

Kings County 2012 — Kings County. 2012. *Initial Study and Negative Declaration – Conditional Use Permit No. 11-03 (SunPower Henrietta Solar Project)*. June.

SJVAPCD 2015 — San Joaquin Valley Air Pollution Control District (SJVAPCD). 2015. *Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI) – Final Draft*.

March. http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf

Western 2015 — Western Area Power Administration (Western) and San Luis & Delta-Mendota Water Authority (SLDMWA). 2015. *San Luis Transmission Project – Draft EIS/EIR*. July. http://www.sltpeis-eir.com/

This page intentionally left blank

3.4. BIOLOGICAL RESOURCES

The discussion in this section is based the biological report prepared for the project by Live Oak Associates (LOA) in October 2017. The LOA report is incorporated into this EIR by reference, as provided under CEQA Guidelines Section 15150. The LOA report is contained in Appendix D of this EIR, and its findings and recommendations are summarized below.

3.4.1. ENVIRONMENTAL SETTING

Westlands Solar Park

Study Methodology

Sources of information used in the LOA's analysis included: 1) the *California Natural Diversity Data Base* (CDFG 2014); 2) the *Online Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2014); and, 3) manuals, reports, and references related to plan area and animals of the San Joaquin Valley region. LOA ecologists conducted a number of reconnaissance-level field surveys of the WSP plan area and gen-tie corridors from 2010 through 2017. Detailed surveys for sensitive biological resources were not conducted during the multiple-year site surveys of the plan area except the Swainson's hawk nest survey in 2012 which included the plan area and lands within a 10-mile radius of the plan area.

The level of effort undertaken during LOA's field surveys was sufficient to locate and establish the general extent of wetland and special-status species habitat that might be present, but was not sufficient to establish precise wetland boundaries or the extent of actual use of onsite habitats by special status species may be present. Field surveys conducted for this study were sufficient to assess the significance of potential biological impacts associated with the solar development of the 21,000-acre WSP plan area, and to assess the need for more detailed studies that could be warranted if sensitive biotic resources were identified in this program-level survey. Delineating all wetlands that may be present, conducting focused surveys for sensitive plants and wildlife species, or mapping the extent of any special-status-species habitat present may be warranted prior to the development of individual solar projects within the WSP plan area. The need for any such subsequent surveys or delineations is identified below where appropriate.

Biotic Habitats

Five biotic habitats were observed on and adjacent to the plan area and gen-tie corridors during the biological field surveys conducted from 2010 through 2017. These include: fallow/pasture/barren/shrubland, irrigated fields, orchard/vineyard, tailwater pond, and canal/aquatic, as well as developed land use. These habitats are shown in Figure BIO-1 and described below.

Fallow/Pasture/Barren/Shrubland

The vast majority of the WSP plan area consists of fallow fields/pasture/barren/shrubland areas (see Figure BIO-1), while the gen-tie corridors contain relatively little of this habitat. Much of this area appears to have been fallowed (unplanted) for five years or more. Fallowed fields showed no sign of irrigation and were dominated by non-native grasses and forbs adapted to withstand the long hot dry season. Vegetation in these areas varied from low-growing to taller more dense herbaceous cover depending on the field. Vegetation height and density is likely dependent upon soil characteristics and yearly rainfall. Grass and forb species common to this habitat/land use include fiddleneck, wild oat, soft chess brome, red brome, horseweed, and prickly wild lettuce, among others. Very little native vegetation such as Alkali mallow was observed in this habitat.

Wildlife species expected to occur in this habitat would be somewhat similar to those species occurring in the cultivated fields, described below. However, because this habitat is not regularly cultivated, an herbaceous groundcover has developed that provides forage and cover for regional and transient wildlife. Therefore, the fallow fields and pastures would support somewhat larger populations and a greater diversity of wildlife species than the cultivated fields.

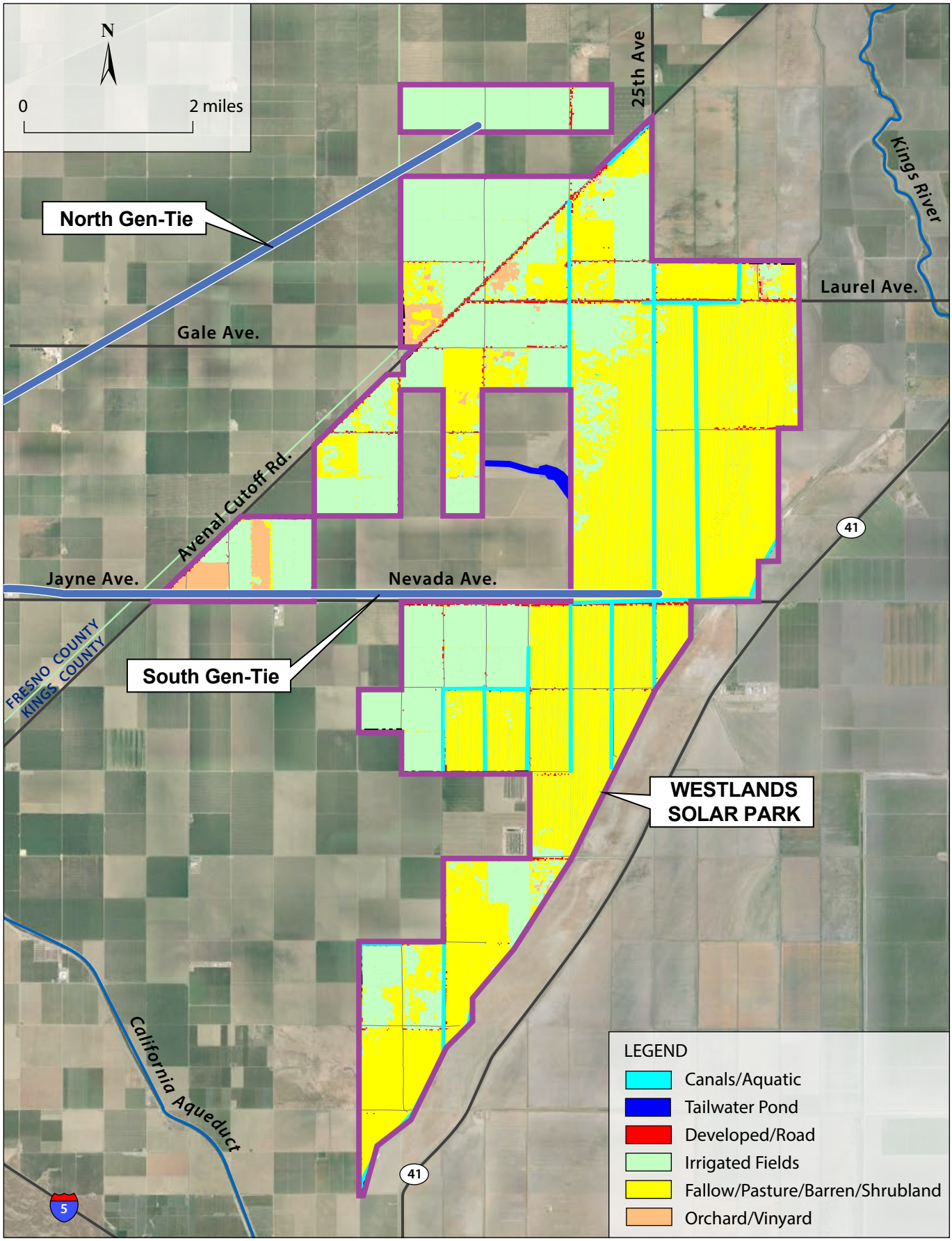
The fallow fields/pasture/barren/shrubland would support much of the same amphibian and reptile species as the irrigated fields, described below; but at a greater density and with the possible addition of species such as western whiptails, coachwhips, and glossy snakes.

Birds observed foraging in the fallow fields during LOA's surveys included killdeer, mourning dove, western kingbird, loggerhead shrike, American crow, common raven, horned lark, northern mockingbird, American pipit, savannah sparrow, song sparrow, white-crowned sparrow, red-winged blackbird, western meadowlark. Raptors observed over fallow field/pasture include the red-tailed hawk and northern harrier. Other raptors that may forage on or over this habitat within plan area include the white-tailed kite, American kestrel, and various owl species such as the barn owl and western burrowing owl.

A number of mammal species may also occur within the fallow fields/idle croplands of the plan area. Mammals such as deer, California voles, house mice, California ground squirrel, and Botta's pocket gopher would occur in fluctuating numbers depending on the season and available cover. Other small mammals likely to occur from time to time within these fields include black-tailed hares and desert cottontail rabbits. Various species of bat may also forage over the agricultural fields of the plan area for flying insects.

Irrigated Fields

After the fallow field/ pasture/barren/shrubland, the next most extensive habitat/land use of the plan area is cultivated fields (see Figure BIO-1). Within the gen-tie corridors, irrigated fields comprise the predominant habitat/land use. These fields are disturbed by agricultural practices on a regular basis. During the LOA field surveys during the spring of the years 2010 through 2015, much of the fields were disced and barren of vegetation in preparation of the spring planting season. Crops identified included wheat, garbanzo beans, tomatoes, onion, grape vines, and alfalfa. Bare fields, almond orchards, and other unidentified crops were also present. The sparse vegetation that was observed in the disced fields consisted primarily of non-native grasses and forbs such as fiddleneck, wild oat, field mustard, Shepherd's purse, jimsonweed, seaside heliotrope, prickly lettuce, common mallow, Russian thistle, and escaped wheat, which are adapted to regular disturbance. Several lone willow trees were sparsely scattered throughout the margins of the cultivated fields.



Sources:
Base map: Google Earth, 2016;
Biotic habitats: Live Oak Associates, 2017

Biotic Habitats
Figure BIO-1

This page intentionally left blank

Vegetation in this community is highly managed, with cultivation, monocrop plantings, and weed abatement efforts defining the broad annual cycle. As a result, these fields provide only marginal habitat for most native wildlife. Nonetheless, some native wildlife species may use these fields, as described in more detail below.

Cultivated fields within the plan area and gen-tie corridors provide limited habitat for amphibians and reptiles. Amphibian species, such as Pacific chorus frogs and western toads may use the adjacent irrigation canals for breeding and may also disperse through the cultivated fields during the winter and spring, but these fields provide marginal habitat value for these species at best. Reptile species that may forage in this habitat include the side-blotched lizard, gopher snake, and common kingsnake.

These fields provide foraging habitat for a number of avian species. Species observed in and around cultivated fields of the plan area and gen-tie corridors include the mourning dove, western kingbird, loggerhead shrike, Common raven, American pipit, horned lark, red-winged blackbird, western meadowlark, Brewer's blackbird, and brown-headed cowbird. Raptors observed foraging over cultivated fields include the northern harrier, red-tailed hawk, and American kestrel. Other common resident species likely to forage in the agricultural fields of the plan area and gen-tie corridors include the European starling. Winter migrants common to the area include white-crowned sparrows, and savannah sparrows.

Mammal species utilizing the cultivated fields would be essentially the same as those likely to occur in the fallow fields/ pasture/barren/shrubland but at a somewhat lower density.

The presence of birds and small mammals is likely to attract foraging raptors, such as red-tailed hawks, white-tailed kites, and various owls such as the burrowing owl. Mammalian predators occurring within the plan area and gen-tie corridors would most likely be limited to raccoons, striped skunks, coyotes (*Canis latrans*) and red foxes, as these species are tolerant of human disturbance.

Orchard/Vineyard

This habitat occurs within the plan area and gen-tie corridors and includes fruit, nut, and other tree crop orchards such as almonds, apricots, grapes, open water, oranges, pistachios, pomegranates, and walnuts, as well as grapes. Animal species are expected to sparsely use these habitats and include the species in the adjacent habitats.

Tailwater Pond

One off-site pond was observed in the vicinity of the plan area near the center of the plan area (see Figure BIO-1). While this pond is not located within the plan area, its proximity to the plan area warranted detailed consideration of its habitat characteristics and value. This pond was approximately 2,200 feet long and 500 feet wide, and reportedly served as a tailwater pond for storage of irrigation return flows from nearby fields. Aside from trees along the levees, the pond area is sparsely vegetated with vegetation increasing significantly by late April. The tailwater pond was observed to be fringed with hydrophytic vegetation including tall flatsedge, seaside heliotrope, alkali mallow, Harding grass, knotweed, willow leaved dock, Goodding's willow, athel tamarisk, and common cattail. Other vegetation observed in this habitat includes common nightshade, common cudweed, saltbush, common sunflower, cheeseweed, and summer mustard.

The aquatic habitat and riparian vegetation associated with the tailwater pond are expected to support some amphibian species and numerous avian species. Species observed within or in the vicinity of the

pond during the field surveys included: a desiccated bullfrog, a great horned owl, a nesting pair of barn owls, peregrine falcon, prairie falcon, and Swainson's hawk (see next paragraph). Various wading birds such as the American avocet, long-billed dowitcher, great egrets, great blue herons, and a small rookery of black-crowned night herons, as well as mallards were observed using this habitat.

During the 2010 field surveys, Swainson's hawks were observed flying overhead in the vicinity of the tailwater pond. During the 2011 field surveys, a pair of Swainson's hawks was observed flying over the tailwater pond, and a pair of red-tailed hawks was also observed over the pond. The trees surrounding the pond supported two nesting great horned owls, one nest with one owlet and the other nest with two owlets. During the 2012-2014 field surveys, Swainson's hawks were observed flying over the pond area, and red-tailed hawks and great-horned owls were also observed at the pond. On April 15, 2015 LOA ecologists observed two Swainson's hawks land in a tree at the tailwater pond although no evidence of nesting was found.

Other birds observed in the immediate area of the pond include the mallard, snowy egret, turkey vulture, killdeer, black-necked stilt, American avocet, spotted sandpiper, greater yellowlegs, whimbrel, least sandpiper, mourning dove, western kingbird, loggerhead shrike, Common raven, horned lark, northern rough-winged swallow, red-winged blackbird, western meadowlark, both individuals and nestlings of Brewer's blackbird, and brown-headed cowbird.

The riparian trees and shrubs associated with the pond provide considerable habitat for a diversity of avian species. The taller shrubs and trees provide roosting and nesting habitat for various resident species such as the yellow-billed magpie, common raven, and red-tailed hawk. This vegetation provides cover for many migrant species moving north from Mexico and Central America during the spring or moving south from the Pacific Northwest and Canada during the fall. The more densely vegetated areas may be used as nesting habitat by spring migrants such as house wrens and Bullock's orioles.

Breeding California toads, breeding American bullfrogs, and gopher snakes were observed near the pond. Mammal species associated with the tailwater pond would be limited to those species found in the surrounding cultivated fields such as the various small mammals observed on the dikes around the pond, including desert cottontail, California ground squirrel burrows, mice, as well as a dead shrew. A coyote skull, raccoon prints, one domestic horse with rider, and domestic sheep were also observed near the pond. Various bat species would find ample foraging habitat along the edges and over the pond.

Canal/Aquatic

For the purposes of this analysis, the term "canal/aquatic" refers to the relatively permanent earthen-banked irrigation water conveyance structures within the plan area, most of which contained water during LOA's multi-year field surveys and/or supported wetland vegetation. Earthen ditches which may be created and/or removed from one crop season to the next, or which rarely contain water, are not considered to be aquatic habitat but are considered part of the cultivated and fallow field habitats described above.

A number of irrigation canals occur within the plan area, all of which have earthen beds and banks (see Figure BIO-1). The largest canal runs along the south side of Laurel Avenue and feeds secondary and tertiary canals in the eastern half of the plan area. The eastern part of the plan area, along with the off-site tailwater pond, supports the greatest biodiversity of any areas in the plan area. Vegetation

occurred in most of the canals; however, signs of vegetation removal within some canals were observed, providing evidence of regular management of the canals to maintain and maximize flows. Wetland and upland native and non-native vegetation observed in the dry canals included common sunflower, Russian thistle, prickly lettuce, salt grass, Mexican sprangeltop, cocklebur, and alkali heath, among others. Canals that were inundated during the survey periods supported included emergent vegetation such as narrow-leaf cattail.

The canals within the plan area provide habitat for several amphibian and reptile species. Amphibian species observed in the canals by LOA included the Pacific chorus frog, breeding California toad, and breeding bullfrog. The presence of amphibians would attract predators such as the common garter snake. Gopher snakes were observed on the roads (dikes) next to canals. An unidentified turtle was observed in a canal near the eastern boundary of the plan area.

Several bird species are likely to forage over the canals for invertebrate prey. Avian species observed in this habitat include the mallard, pied-billed grebe, great blue heron, great egret, snowy, green heron, black-crowned night heron, northern harrier, red-shouldered hawk, common moorhen, American coot, killdeer, black-necked stilt, greater yellowlegs, least sandpiper, long-billed dowitcher, herring gull, mourning dove, black phoebe, Say's phoebe, western kingbird, loggerhead shrike, American crow, northern rough-winged swallow, cliff swallow (observed nesting in concrete culverts), European starling, American pipit, yellow-rumped warbler, lark sparrow, savanna sparrow, song sparrow, white-crowned sparrow, Brewer's blackbird, and house sparrow. Several common ravens' nests were observed throughout the plan area, mostly in power poles/towers, often along the edges of the canals. California ground squirrels and western burrowing owls were observed along the sides of dry and/or inundated canals. A few coyote dens were observed along dry canals.

The canals also provide habitat for aquatic species. Mosquito, fish, carp, and an unknown species of crayfish were observed in the canals. Various species of catfish are also known to inhabit perennial canal habitats.

There are few irrigation canals or agricultural drainage ditches in the gen-tie corridors area, although both gen-tie corridors pass over the San Luis Canal/California Aqueduct to the west of the plan area. The agricultural canals and ditches in the corridors area are periodically maintained and do not support native vegetation associated with wetlands or riparian habitats. There are also several tailwater ponds or irrigation regulating ponds in the vicinity, but these were all created as part of agricultural infrastructure and do not include wetland or riparian habitat.

Developed

Developed areas within the plan area and gen-tie corridors are limited to public and private roads consisting of both paved and dirt roads. The margins of these roads support weedy plant species.

Special Status Plants and Animals

Several species of plants and animals within the state of California have low populations and/or limited distributions. Such species may be considered "rare" and are vulnerable to extirpation as the state's human population grows and the habitats these species occupy are converted to agricultural and urban uses. As described more fully under "Regulatory Context" below, state and federal laws have provided the California Department of Fish and Wildlife (CDFW) and the U.S. Fish and Wildlife Service (USFWS)

with a mechanism for conserving and protecting the diversity of plan area and animal species native to the state. A sizable number of native plan area and animals have been formally designated as "threatened" or "endangered" under state and federal endangered species legislation. Others have been designated as candidates for such listing. Still others have been designated as "species of special concern" by the CDFW. The California Native Plant Society (CNPS) has developed its own set of lists of native plan area considered rare, threatened, or endangered, and this listing is sanctioned by CDFW. Collectively, these plan area and animals are referred to as "special status species."

A number of special status plant and animals occur in the vicinity of the WSP plan area and gen-tie corridors (see Figures 5 and 6 in LOA's WSP biological report contained in Appendix D of this EIR). These species, and their potential to occur in the plan area, are listed in Table BIO-1 on the following pages.

Special-Status Animal Species Meriting Further Discussion

Western Pond Turtle

Federal Listing Status: None; *State Listing Status*: Species of Special Concern.

Life History and Ecology. The western pond turtle is the only native freshwater turtle in California and normally associates with permanent or nearly permanent aquatic habitats, including streams, lakes, and ponds. Historically, this species occurred in Pacific Coast drainages from Washington to Mexico. This species occurs in aquatic habitats with: 1) basking sites such as rocks and logs; 2) dense stands of submergent or emergent vegetation; 3) abundant aquatic invertebrate resources; 4) suitable nearby nesting sites; and 5) the lack of native and exotic predators.

Potential to Occur within the Plan area and Gen-Tie Corridors. One unidentified turtle was observed during an LOA field survey on the eastern edge of the plan area in the large canal running along the south side of Laurel Avenue. A previous sighting of western pond turtle was reported just several miles to the east of this location at the junction of Highway 41 and the Kings River in 1996. Therefore, there is a potential that the western pond turtle may occur in portions of the plan area and gen-tie corridors containing perennial or near perennial waters.

Blunt-Nosed Leopard Lizard

Federal Listing Status: Endangered; *State Listing Status*: Endangered; California Protected.

In addition to being state and federally-endangered, the blunt-nosed leopard lizard (BNLL) is one of fewer than 40 species that has a "fully protected" status through provisions of the California State Fish & Game Code. The CDFG cannot issue a "take" permit for fully protected species, and projects with fully protected species are required to completely avoid direct "take" of the species. In this instance, "take" refers to direct harm, injury, or killing of an individual, not to habitat modifications.

Life History and Ecology. The blunt-nosed leopard lizard is a large, long-lived lizard with short, blunt snout and pale crossbars on its back and tail. It inhabits sparsely vegetated plains, alkali flats, low foothills, grasslands, canyon floors, large river washes, and arroyos. These opportunistic foragers feed primarily on insects, particularly grasshoppers, crickets, moths, and other lizards, and occasionally plant material.

TABLE BIO-1

SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE WSP VICINITY

PLANTS (adapted from CDFG 2016 and CNPS 2016)

Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Act

Species	Status	Habitat	*Occurrence in the Plan Area
California jewel-flower (*Caulanthus californicus*)	FE, CE, CNPS 1B	Chenopod scrub, pinyon and juniper woodland, and sandy valley and foothill grassland at elevations between 70 and 1000 meters. Blooms Feb-May.	**Absent**. Suitable habitat for this species is absent from the plan area. Any suitable habitat that may have once been present has been highly modified for human use.
San Joaquin woolly threads (*Monolopia congdonii*)	FT, CNPS 1B	Chenopod scrub and valley and foothill grassland at elevations between 60 and 800 meters. Blooms February-May.	**Absent**. Suitable habitat for this species is absent from the plan area. Any suitable habitat that may have once been present has been highly modified for human use.
Round leaved filaree (*California macrophylla*)	CNPS 1B	Grasslands and foothills at elevations between 200 and 2,000 feet. Blooms March-May.	**Absent**. Suitable habitat for this species is absent from the plan area. Any suitable habitat that may have once been present has been highly modified for human use.

Other Species under the CNPS

Species	Status	Habitat	*Occurrence in the Plan Area
Round leaved filaree *(California macrophylla)*	CNPS 1B	Grasslands and foothills at elevations between 200 and 2,000 feet. Blooms March-May.	**Absent**. Suitable habitat for this species is absent from the plan area. Any suitable habitat that may have once been present has been highly modified for human use.
Lemmon's jewel-flower (*Caulanthus lemmonii*)	CNPS 1B	Habitat: Occurs in pinion and juniper woodland and valley and foothill grasslands. Elevation: 80-1220 meters. Blooms: March-May.	**Absent**. Suitable habitat for this species is absent from the plan area. Furthermore, this species is not known to occur within the interior of the San Joaquin Valley. The nearest documented occurrence is approximately 9.25 miles southwest of the project site, from a 1962 occurrence centered in the City of Avenal (CDFW 2017).
Recurved larkspur (*Delphinium recurvatum*)	CNPS 1B	Habitat: Occurs in chenopod scrub, cismontane woodland, and valley and foothill grasslands. Elevation: 3-750 meters. Blooms: March-June.	**Unlikely**. Suitable habitat for this species is absent from the plan area. The nearest documented occurrence is approximately 12 miles northwest of the plan area in undisturbed foothill grassland (CDFW 2017). Past farming activities in fallow fields of the site that currently support non-native grassland habitat would have eliminated any recurved larkspur that may have occurred there. Furthermore, many miles of cultivated agricultural fields lie between these fallow fields and all distant documented occurrences of this species or any suitable habitat, making colonization of this species onto onsite fallow fields highly unlikely.

*See end of table for explanation of Occurrence Designations and Status Codes.

TABLE BIO-1 (CONT'D)

SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE WSP VICINITY

PLANTS (adapted from CDFG 2016 and CNPS 2016)
Other Species under the CNPS

Species	Status	Habitat	*Occurrence in the Plan Area
Kern Mallow (*Eremalche parryi ssp. kernensis*)	CNPS 1B	Habitat: Occurs on dry, open sandy to clay soils, often at the edge of balds in chenopod scrub, pinion and juniper woodland, and valley and foothill grassland habitats. Elevation: 70-1290 meters. Blooms: January-May	**Unlikely**. Suitable habitat for this species is absent from the plan area. Furthermore, the plan area is just outside the northern edge of this species documented distribution. The nearest documented occurrence is approximately 7.5 miles southwest of the plan area, from a 1973 occurrence in foothill grassland northeast of the City of Avenal (CDFW 2017). Past farming activities in fallow fields of the plan area that currently support non-native grassland habitat would have eliminated any Kern mallow that may have occurred there. Furthermore, many miles of cultivated agricultural fields lie between these fallow fields and all distant documented occurrences of this species or any suitable habitat, making colonization of this species onto onsite fallow fields highly unlikely.

ANIMALS (adapted from CDFG 2016 and USFWS 2016)
Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Act

Species	Status	Habitat	*Occurrence in the Plan area
Vernal pool fairy shrimp (*Branchinecta lynchi*)	FT	Occurs in vernal pools of California.	**Absent**. Suitable habitat in the form of vernal pools is absent from the plan area.
Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)	FT	Lives in mature elderberry shrubs of California's Central Valley and Sierra Foothills.	**Absent**. Suitable habitat in the form of elderberry shrubs is absent from the plan area.
California tiger salamander (*Ambystoma californiense*)	FT, CT	Breeds in vernal pools and stock ponds of central California; adults aestivate in grassland habitats adjacent to the breeding sites.	**Absent**. No historic or current records of this species are known within the region. Intensively cultivated lands provide unsuitable habitat for this species. The nearest recorded observation is more than 22 miles to the northeast of the plan area (CNDDB 2016).

*See end of table for explanation of Occurrence Designations and Status Codes.

TABLE BIO-1 (CONT'D)

SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE WSP VICINITY

ANIMALS – cont'd

Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Act

Species	Status	Habitat	*Occurrence in the Plan Area
Giant garter snake (*Thamnophis gigas*)	FT, CT	Habitat requirements consist of (1) adequate water during the snake's active season (early-spring through mid-fall) to provide food and cover; (2) emergent, herbaceous wetland vegetation, such as cattails and bulrushes, for escape cover and foraging habitat during the active season; (3) grassy banks and openings in waterside vegetation for basking; and (4) higher elevation uplands for cover and refuge from flood waters during the snake's dormant season in the winter.	**Unlikely**. Marginal breeding and overwintering habitat is available along major irrigation canals along the eastern edge of the plan area. However, the nearest recorded observation is more than 13 miles to the north and is a historic record from a published account in 1941 (CNDDB 2016). See expanded discussion following this table.
Blunt-nosed leopard lizard (*Gambelia silus*)	FE, CE, CP	Frequents grasslands, alkali meadows and chenopod scrub of the San Joaquin Valley from Merced south to Kern County.	**Unlikely**. Habitats required by this species have been highly disturbed or eliminated as a result of agricultural activities. The nearest recorded observation is more than 8 miles to the southwest (CNDDB 2016).
Swainson's hawk (*Buteo swainsoni*)	CT	Breeds in stands with few trees in juniper-sage flats, riparian areas, and in oak savannah. Requires adjacent suitable foraging areas such as grasslands or alfalfa fields supporting rodent populations.	**Present**. Foraging habitat is available throughout the plan area in both fallow and agricultural fields. Breeding habitat is present in riparian trees along the off-site tailwater pond. A pair of Swainson's hawks was observed flying over the tailwater pond in 2010-2014, and a pair was observed landing in a tree at the tailwater pond during 2015 surveys.
California least tern (*Sterna antillarum browni*)	FE, CE, CP	Occurs in coastal central to southern California April to November. Found in and near coastal habitat including coasts, beaches, bays, estuaries, lagoons, lakes, and rivers. When found inland, they are near large bodies of water.	**Unlikely.** California least terns are most prevalent on the coast of central to southern California for breeding. Although records exist of them occurring inland, they are observed near large bodies of water. As the plan area does not support large bodies of water, the California least tern would be unlikely to occur within the plan area, although, they may fly over the plan area from time to time during migration.
Western yellow-billed cuckoo (Coccyzus americanus occidentalis)	FC, CE	Breed in large blocks of riparian habitats, particularly cottonwoods and willows.	**Absent.** Dense riparian habitat required by this species is absent from the plan area.

*See end of table for explanation of Occurrence Designations and Status Codes.

TABLE BIO-1 (CONT'D)

SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE WSP VICINITY

ANIMALS – cont'd

Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Act

Species	Status	Habitat	*Occurrence in the Plan Area
Western snowy plover (*Charadrius alexandrines nivosus*)	FT, CSC	Uses human-made agricultural wastewater ponds and reservoir margins. Breeds on barren to sparsely vegetated ground at alkaline or saline lakes, reservoirs, ponds, and riverine sand bars.	**Possible**. Breeding and foraging habitat is available along agricultural canals and nearby ponds, including the agricultural pond inside the plan area. The nearest recorded observation is approximately 3 miles to the east of the plan area (CNDDB 2016).
Nelson's antelope squirrel (*Ammospermophilus nelsoni*)	CT	Frequents open shrublands and annual grassland habitats.	**Absent**. Habitats required by this species are absent from the plan area and surrounding agricultural lands due to intensive agricultural use.
Giant kangaroo rat (*Dipodomys ingens*)	FE, CE	Inhabits grasslands on gentle slopes generally less than 10°, with friable, sandy-loam soils.	**Absent**. Habitats required by this species are absent from the plan area and surrounding agricultural lands due to intensive agricultural use.
Tipton kangaroo rat (*Dipodomys nitratoides nitratoides*)	FE, CE	Inhabits arid land with grassland or salt scrub on level or near-level terrain on the San Joaquin Valley floor with alluvial fan and floodplain soils.	**Absent.** The habitat of the plan area has been disturbed for agricultural use for many years, therefore, Tipton's kangaroo rat would not be expected to recolonize the plan area. The nearest recorded observation of the TKR is from 1951 and is approximately 2.5 miles south of the plan area south of Kettleman City near the California Aqueduct (CNDDB 2017).
Fresno kangaroo rat (*Dipodomys nitratoides exilis*)	FE, CE	Inhabits grassland on gentle slopes generally less than 10°, with friable, sandy-loam soils.	**Absent**. Habitats required by this species are absent from the plan area and surrounding agricultural lands due to intensive agricultural use.
San Joaquin kit fox (*Vulpes macrotis mutica*)	FE, CT	Frequents desert alkali scrub and annual grasslands and may forage in adjacent agricultural habitats. Utilizes enlarged (4 to 10 inches in diameter) ground squirrel burrows as denning habitat.	**Unlikely**. Burrows observed within the plan area during the multi-year surveys were of suitable size for the kit fox. However, nearly all these burrows were within the vicinity of California ground squirrels or actively used by ground squirrels. An extensive burrow survey was not conducted. The plan area has been highly modified for agricultural use and, as a result, provides only marginal foraging and breeding habitat for the kit fox. Fallow land provides more suitable foraging habitat than agricultural fields. There are no documented sightings of this species within the plan area, but there have been numerous documented sightings within a ten-mile radius of the plan area, between 1971 and 2002 (CNDDB 2016). Therefore, kit foxes are unlikely to breed within the plan area, but may occasionally forage within the plan area, and may use the plan area for dispersal movements.

TABLE BIO-1 (CONT'D)

SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE WSP VICINITY

ANIMALS (adapted from CDFG 2016 and USFWS 2016)
State Species of Special Concern

Species	Status	Habitat	*Occurrence in the Plan area
Western spadefoot (*Scaphiopus hammondii*)	CSC	Primarily occurs in grasslands, but also occurs in valley and foothill hardwood woodlands. Requires vernal pools or other temporary wetlands for breeding.	**Unlikely**. Vernal pools required for breeding are absent from the plan area. Terrestrial habitat required for aestivation is absent from cultivated fields and marginally available in fallow fields.
Western pond turtle (*Actinemys marmorata*)	CSC	Intermittent and permanent waterways including streams, marshes, rivers, ponds and lakes.	**Possible**. Habitat for this species is available in and along the larger agricultural canals. An unidentified turtle was observed in such a canal during the 2010 field survey of plan area. The nearest documented occurrence is less than 2 miles to the east of the plan area (CNDDB 2016).
Silvery legless lizard (*Anniella pulchra pulchra*)	CSC	Occurs in sparsely vegetated areas of beach dunes, chaparral, pine-oak woodlands, desert scrub, sandy washes, and stream terraces with sycamores, cottonwoods, or oaks.	**Unlikely**. Habitat for this species is not available.
Coast horned lizard (Phrynosoma blainvillii)	CSC	Grasslands, scrublands, oak woodlands, etc. of central California. Common in sandy washes with scattered shrubs.	**Unlikely**. Habitats required by this species are absent because they have been heavily modified for human use. The nearest documented observation of this species is more than 27 miles to the northwest of the plan area (CNDDB 2016).
San Joaquin whipsnake (Masticophis flagellum ruddocki)	CSC	Open, dry habitats with little or no tree cover. Found in valley grasslands and saltbush scrub in the San Joaquin Valley.	**Possible**. Some habitat for this species occurs in fallowed lands along the eastern portion of the plan area. The nearest documented occurrence of this species is more than 3 miles south of the Plan area.
American white pelican (nesting) (Pelecanus erythrorhynchos)	CSC	Nests on islands in large lakes or on ephemeral islands in shallower wetlands.	**Unlikely.** Nesting habitat is absent from the plan area. A flock of this species was observed flying over the Plan area.

*See end of table for explanation of Occurrence Designations and Status Codes.

TABLE BIO-1 (CONT'D)

SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE WSP VICINITY

ANIMALS – cont'd
State Species of Special Concern

Species	Status	Habitat	*Occurrence in the Plan area
White-faced ibis (*Plegadis chihi*)	CSC	Salt and freshwater marsh as well as grain and alfalfa fields.	**Possible**. Marginal foraging habitat required for this species is present in the form of alfalfa, grain, and fallow fields within the plan area. Breeding habitat is absent. In 2010, a dead white-faced ibis was observed on a road shoulder by LOA biologists 5.5 miles east of the plan area.
Northern harrier (*Circus cyaneus*)	CSC	Frequents meadows, grasslands, open rangelands, freshwater emergent wetlands; uncommon in wooded habitats.	**Present**. Harriers were observed foraging over agricultural fields within the plan area in 2010 and 2011.
White-tailed kite (*Elanus leucurus*)	CP	Open grasslands and agricultural areas throughout central California.	**Possible**. Suitable breeding and foraging habitat occurs for this species within the plan area.
Mountain plover (*Charadrius montanus*)	CSC	Forages in short grasslands and freshly plowed fields of the Central Valley.	**Possible**. The plan area provides suitable winter foraging habitat for this species.
Burrowing owl (*Athene cunicularia*)	CSC	Frequents open, dry annual or perennial grasslands, deserts, and scrublands characterized by low growing vegetation. Dependent upon burrowing mammals, most notably the California ground squirrel, for nest burrows.	**Present**. Multiple burrowing owls were observed within the plan area along dry agricultural canals. Nesting habitat in the form of ground squirrel burrows exist onsite and were in use by owls during the multi-year surveys.
Black swift (*Cypseloides niger*)	CSC	Migrants found in many habitats of state; in Sierra nests are often associated with waterfalls.	**Absent**. The plan area does not provide suitable breeding or foraging habitat for this species.
Vaux's swift (Chaetura vauxi)	CSC	Migrants move through the foothills of the western Sierra in spring and late summer. Some individuals breed in the region.	**Absent.** The plan area does not provide suitable breeding or foraging habitat for this species.
Loggerhead shrike (Lanius ludovicianus)	CSC	Frequents open habitats with sparse shrubs and trees, other suitable perches, bare ground, and low herbaceous cover. Can often be found in cropland.	**Present.** This species was observed throughout the plan area in agricultural fields and canals and fallow/pasture fields in 2010 and 2011.

*See end of table for explanation of Occurrence Designations and Status Codes.

TABLE BIO-1 (CONT'D)

SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE WSP VICINITY

ANIMALS – cont'd
State Species of Special Concern

Species	Status	Habitat	*Occurrence in the Plan area
Tricolored blackbird (Agelaius tricolor)	CSC	Breeds near fresh water, primarily emergent wetlands, with tall thickets. Forages in grassland and cropland habitats.	**Possible**. Suitable foraging habitat occurs onsite for this species. Marginal breeding habitat occurs at the agricultural pond and large canals. The nearest recorded observation is more than 5 miles to the west of the plan area (CNDDB 2016).
Tulare grasshopper mouse (Onychomys torridus)	CSC	Arid shrubland communities in hot, arid grassland and scrub desert associations. These include blue oak woodlands at 450 m (1476 feet); upper Sonoran subshrub scrub community; alkali sink and mesquite associations on the valley floor; and grasslands associations on the sloping margins of the San Joaquin Valley and Carrizo Plain region.	**Absent**. Suitable shrubland habitat is not present within the plan area.
Townsend's Big-eared bat (Corynorhinus townsendii)	CSC	Primarily a cave-dwelling bat that may also roost in buildings. Occurs in a variety of habitats.	**Possible**. Suitable foraging habitat for this species is present within the plan area; roosting habitat is absent.
Pallid bat (Antrozous pallidus)	CSC	Roosts in rocky outcrops, cliffs, and crevices with access to open habitats for foraging. May also roost in caves, mines, hollow trees and buildings.	**Possible**. Suitable roosting and foraging habitat for this species is present within the plan area.
California mastiff bat (Eumops perotis ssp. californicus)	CSC	Frequents open, semi-arid to arid habitats, including conifer, and deciduous woodlands, coastal scrub, grasslands, palm oasis, chaparral and urban. Roosts in cliff faces, high buildings, trees and tunnels.	**Possible.** Suitable roosting and foraging habitat for this species is present within the plan area. The nearest recorded observation is less than 8 miles to the west of the plan area (CNDDB 2016).

*See end of table for explanation of Occurrence Designations and Status Codes.

TABLE BIO-1 (CONT'D)

SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE WSP VICINITY

ANIMALS – cont'd
State Species of Special Concern

Species	Status	Habitat	*Occurrence in the Plan area
American badger (*Taxidea taxus*)	CSC	Found in drier open stages of most shrub, forest and herbaceous habitats with friable soils.	**Possible**. No burrows of the size and shape suitable for this species were observed within the plan area. However, an exhaustive search was not conducted. It is possible this species may establish burrows in fallow/pasture fields with sparse to moderately dense vegetation within the plan area. The nearest documented observation is 6 miles to the west of the plan area (CNDDB 2016).
Ringtail (*Bassariscus astutus*)	CP	Riparian and heavily wooded habitats near water.	**Unlikely**. Marginal habitat for this species is present in the riparian area around the off-site tailwater pond.

***Explanation of Occurrence Designations and Status Codes**
Present: Species observed within the plan area at time of field surveys or during recent past.
Likely: Species not observed within the plan area, but it may reasonably be expected to occur there on a regular basis.
Possible: Species not observed within the plan area, but it could occur there from time to time.
Unlikely: Species not observed within the plan area, and would not be expected to occur there except, perhaps, as a transient.
Absent: Species not observed within the plan area, and precluded from occurring there because habitat requirements not met.

STATUS CODES

FE	Federally Endangered	CE	California Endangered
FT	Federally Threatened	CT	California Threatened
FPE	Federally Endangered (Proposed)	CR	California Rare
FC	Federal Candidate	CP	California Fully Protected
		CSC	California Species of Special Concern

CNPS California Native Plant Society Listing
1A Plants Presumed Extinct in California
1B Plants Rare, Threatened, or Endangered in California and elsewhere
2 Plants Rare, Threatened, or Endangered in California, but more common elsewhere
3 Plants about which we need more information – a review list
4 Plants of limited distribution – a watch list

The species was originally found throughout the San Joaquin Valley and adjacent foothills, from San Joaquin County south to eastern San Luis Obispo County. Its distribution has been reduced by conversion of habitat to cropland. The blunt-nosed leopard lizard now occurs in scattered locations in the valley and in the eastern portions of the Coast Ranges, including the Antelope and Carrizo Plains and Cuyama Valley.

Potential to Occur within the WSP Plan Area and Gen-Tie Corridors. The BNLL is known to occur west of Interstate 5, several miles from the southern end of the plan area. A few sightings of this species have been documented in the Kettleman Hills, just west of Kettleman City, with the nearest observation reported in 1994 more than 8 miles southwest of the plan area. Given the decades of ground disturbance that have occurred in the plan area and gen-tie corridors from agricultural use, the plan area provides no habitat in cultivated fields and provides extremely marginal habitat in fallowed areas of the plan area. Therefore, it is considered extremely unlikely that BNLL would occur within the plan area or the gen-tie corridors.

Giant Garter Snake

Federal Listing Status: Threatened; *State Listing Status*: Threatened.

The giant garter snake population has suffered severe declines as a result of habitat loss due to urbanization and agricultural activities, and was listed as federally threatened in 1993. A draft recovery plan for the giant garter snake was completed in 1999, but a final recovery plan has not been adopted.

Life History and Ecology. The giant garter snake is one of the largest garter snakes, reaching a total length of at least 63 inches. Dorsal background coloration varies from brownish to olive with a checkered pattern of black spots, separated by a yellow dorsal stripe and two light colored lateral stripes. Giant garter snakes feed primarily on small fishes, tadpoles, and frogs.

The giant garter snake inhabits small mammal burrows and other soil crevices above prevailing flood elevations throughout its winter dormancy period. Giant garter snakes typically select burrows with sunny exposure along south- and west-facing slopes. Although giant garter snakes generally remain in close proximity to aquatic and wetland habitats, they have been observed foraging or dispersing through upland habitats up to 800 feet from marshes and pools. The giant garter snake is generally inactive during the winter and seeks cover in rodent burrows that may be as much as 800 feet from marshes and ponds.

Potential to Occur within the WSP Plan Area and Gen-Tie Corridors. As noted, the plan area has been highly disturbed by agricultural activities. While some of the larger irrigation canals within the plan area provide potentially suitable habitat for this species, the nearest known populations of giant garter snakes are associated with the San Joaquin River drainage in areas near Mendota approximately 40 miles northwest of the plan area. The nearest documented occurrence is more than 13 miles to the north in the Kings River drainage and was reported in 1941. Based on the highly disturbed nature of the plan area and gen-tie corridors and the lack of recent documentation of this species in the immediate region, the giant garter snake is considered unlikely to occur within the plan area or the gen-tie corridors.

Swainson's Hawk

Federal Listing Status: None; *State Listing Status*: Threatened.

The Swainson's hawk is designated as a California Threatened species. The loss of agricultural lands (i.e., foraging habitat) to urban development and additional threats such as riverbank protection projects have contributed to its decline.

Life History and Ecology. Swainson's hawks are large, broad-winged, broad-tailed hawks. Male and female Swainson's hawks have similar body types, with a length generally between 17 and 22 inches and a wingspan between 47 and 57 inches. They weigh up to 2.5 pounds.

Swainson's hawks have a high degree of mate and territorial fidelity. They arrive at their nesting sites in March or April, and build a nest which is likely to be a three- to four-foot diameter stick nest constructed in a tree, and can take up to two weeks to complete. In the Central Valley, Swainson's hawks typically nest in large trees within or near riparian systems adjacent to suitable foraging habitats. Other suitable nest sites include lone trees, groves of trees such as oaks, other trees in agricultural fields, and mature roadside trees. The young hatch sometime between March and July and do not leave the nest until some 4 to 6 weeks later. Swainson's hawks forage in large, open fields with abundant prey, including grasslands or lightly grazed pastures, alfalfa and other hay crops, and certain grain and row croplands.

Potential to Occur within the WSP Plan Area and Gen-Tie Corridors. Swainson's hawks are known to forage in areas surrounding the plan area. The trees surrounding the off-site tailwater pond, as well as trees along the nearby Kings River, provide suitable nesting and perching habitat, and the fallow and agricultural lands provide suitable foraging habitat. In June 2010, LOA biologists observed a pair of Swainson's hawks soaring above and around the tailwater pond. The LOA biologists conducted a thorough search for a nest, but no Swainson's hawk nest was observed in the trees associated with the tailwater pond. Subsequent thorough searches of the tailwater pond area by LOA biologists during the breeding seasons of 2011 through 2015 failed to detect the presence of a Swainson's hawk nest in the vicinity of the tailwater pond. In 2015, LOA biologists observed a pair of Swainson's hawks land in a tree adjacent to the tailwater pond, but no nest was found. Therefore, LOA concluded that while Swainson's hawks likely forage on-site throughout the months of March through September, there is no evidence of Swainson's hawk nesting activity within the plan area.

In the spring of 2012, LOA conducted a Swainson's hawk nest survey of the plan area as well as accessible lands within a 10-mile radius of the plan area, except for those lands previously surveyed by ESTEP Ecological Consulting (2011 and 2012). Four active Swainson's nests were observed, two of which were in trees northwest of the Town of Huron, one nest was located just east of Kettleman City in a stand of eucalyptus trees, and one nest was located in a cottonwood tree located south of the southern tip of the WSP plan area. During the 2013-2015 spring surveys, this latter nest was observed to be in active use by a pair of breeding Swainson's hawks. This pair likely uses the WSP plan area for foraging. As shown in Figure 7 in the LOA report in Appendix D, there are no known Swainson's hawk nests within or in the immediate vicinity of the gen-tie corridors.

In summary, Swainson's hawks are present within the plan area and gen-tie corridors and likely forage onsite throughout the months of March through September, and nest near the southern limit of the plan area in some years.

Burrowing Owl

Federal Listing Status: None; *State Listing Status*: Species of Special Concern.

The burrowing owl is designated as a California Species of Special Concern. This designation was based on the species' declining population within the state, which is mainly the result of habitat destruction from development and agricultural practices.

Life History and Ecology. The burrowing owl is a small, long-legged bird that averages a height of 9.5 inches, has an average wingspan of 23 inches, and weighs an average of 5.25 ounces. Burrowing owls are unique in that they are the only owl that regularly lives and breeds in underground nests. In California, these birds typically occur in the Central and Imperial Valleys, primarily utilizing ground squirrel burrows (or the burrows of other animals, e.g., badgers, prairie dogs and kangaroo rats) found in grasslands, open shrub lands, deserts, and, to a lesser extent, grazed and agricultural lands. Burrowing owls in this region are typically found at elevations below 250 feet and exhibit strong site fidelity. Pairs have been known to return to the same area year after year, and sometimes utilize the same burrow as the previous year. Burrowing owls are colonially nesting raptors, and colony size is indicative of habitat quality. It is not uncommon to find burrowing owls in developed and cultivated areas where California ground squirrels are active.

Burrowing owls feed on various small mammals including deer mice, voles, and rats. They also prey on various invertebrates including crickets, beetles, grasshoppers, spiders, centipedes, scorpions and crayfish. Peak hunting periods occur around dusk and dawn.

Potential to Occur within the WSP Plan Area and Gen-Tie Corridors. During LOA's multi-year surveys, burrowing owls were observed utilizing existing burrows along canals in the eastern and southern portions of the plan area. In the survey years, LOA biologists observed a minimum of 8 pair is some years and a minimum of 12 pair within the plan area in other years. The Plan area provides suitable habitat for this species in the form of California ground squirrel burrows present in fallow fields and canal banks. LOA biologists estimate that approximately 51 percent of the Plan area provides suitable year-round habitat and an additional 38 percent provides suitable seasonable habitat for burrowing owls. Within the gen-tie corridors vicinity, burrowing owls have been observed along and near the California Aqueduct within 3 miles of the southern gen-tie corridor. Thus, suitable nesting habitat likely occurs in the vicinity of the gen-tie corridors.

San Joaquin Kit Fox

Federal Listing Status: Endangered; *State Listing Status*: Threatened.

By the time the U.S. Fish and Wildlife Service listed it as an endangered species under the Federal Endangered Species Act in 1967, the San Joaquin kit fox had been extirpated from much of its historic range. In 1971, the State of California listed the kit fox as a threatened species, and in 1998 the USFWS adopted a final recovery plan area for the San Joaquin kit fox. Critical habitat has not been established for the San Joaquin kit fox.

Life History and Ecology. The San Joaquin kit fox, the smallest North American member of the dog family (Canidae), historically occupied the dry plains of the San Joaquin Valley, from San Joaquin County

to southern Kern County. Local surveys, research projects, and incidental sightings indicate that kit foxes currently occupy available habitat on the San Joaquin Valley floor and in the surrounding foothills.

Kit foxes prefer habitats of open or low vegetation with loose soils. In the northern portion of their range, they occupy grazed grasslands and, to a lesser extent, valley oak woodlands. In the southern and central portion of the San Joaquin Valley, kit foxes are found in valley sink scrub, valley saltbrush scrub, upper Sonoran subshrub scrub, and annual grassland. Kit foxes may also be found in grazed grasslands, urban settings, and in areas adjacent to tilled or fallow fields.

Kit fox diets vary geographically, seasonally, and annually. In the central portion of their range, which includes lands around the Plan area, known prey includes white-footed mice, insects, California ground squirrels, black-tailed hares, San Joaquin antelope squirrels, kangaroo rats, desert cottontails, and ground-nesting birds.

The kit fox requires underground dens to raise pups, regulate body temperature, and avoid predators and other adverse environmental conditions. In the central portion of their range, they usually occupy burrows excavated by small mammals, such as ground squirrels. Denning habitat consists of ground squirrel complexes in which some burrows have been enlarged to 4 to 6 inches in diameter for the length of approximately 2 feet.

Potential to Occur within the WSP Plan area and Gen-Tie Corridors. Lands surrounding the plan area and the gen-tie corridors consist of cultivated and fallow agricultural fields and the State Route 41 corridor as well as rangeland in the Kettleman Hills to the south and southwest. The lands within the plan area and the gen-tie corridors have been heavily managed for agricultural uses for decades. Agricultural lands are not generally suitable for the San Joaquin kit fox since they provide a limited prey base and thus constitute marginal foraging habitat.

Although a few burrows were observed by LOA biologists that were of suitable dimensions for kit fox, these burrows were or appeared to be occupied by California ground squirrels or burrowing owls; however, protocol-level surveys were not conducted.

According to the CNDDB there have been a total of 32 historical sightings of San Joaquin kit fox within 10 miles of the plan area, none of which occurred within the plan area itself (the observation locations are shown in Figure 6 of LOA's biological report in Appendix D of this EIR). These sightings occurred to the east, west, and south of the plan area. Many of these sightings are from the 1970s, but some are from the last 20 years, with the most recent from 2002. The multiple large irrigation canals run that through the plan area may act as movement corridors; however, should a kit fox utilize these corridors, the fox would have to travel through miles of marginal to poor habitat before reaching the plan area, which itself holds little habitat value.

In summary, the plan area and the gen-tie corridors offer marginal habitat primarily in fallowed fields; the surrounding lands provide similar habitat. Considering the highly disturbed condition of the plan area and the gen-tie corridors, their isolation from extant kit fox populations, and their marginal to poor suitability as foraging or denning habitat, it is unlikely any kit fox have taken up residence within the plan area or the gen-tie corridors. While the plan area and gen-tie corridors do not provide suitable habitat for San Joaquin kit fox, they may be used by occasional dispersing kit foxes traversing the plan area.

Wildlife Movement Corridors

Wildlife movement corridors are areas where regional wildlife populations regularly and predictably move during dispersal or migration. Movement corridors in California are typically associated with valleys, rivers and creeks supporting riparian vegetation, and ridgelines. In the San Joaquin Valley, which lacks many of the more pronounced topographic features found in the surrounding foothills, wildlife will often move across ill-defined undeveloped habitat patches; or regional movement is facilitated along existing linear features such as ditches, canals, farm roads, and creeks. In areas of intense farming, these existing linear features tend to be used disproportionately for movement when compared to the adjacent, intensely farmed lands. While actively farmed fields are not barriers in themselves, they are used less often than the linear features that cut through them.

The intense farming throughout the San Joaquin Valley over the last century has long altered the more traditional regional movement patterns of wildlife. While regionally-occurring wildlife do in fact move across the broad range of the Valley, they do so less effectively than they once did, relying more extensively on various linear features such as canals, ditches and creeks. Regionally, the nearest areas believed to provide for regional wildlife movement include areas in the surrounding Sierra and inner coast range foothills that have not been substantially altered.

The WSP plan area and gen-tie corridors consists mainly of agricultural fields or fallowed pasture fields with minor areas of ruderal/developed and canal habitat. A number of medium to large canals are located within the plan area, which in agricultural areas of the San Joaquin Valley can function as movement corridors for the regular home range or dispersal movements of native wildlife, including special status species. The large area comprising the plan area (approximately 33 sq. mi.) likely has value for the regional movements of some wildlife species, when placed in a regional context. However, it is noted that the USFWS' *Recovery Plan for Upland Species of the San Joaquin Valley* (Recovery Plan area) does not show movement corridors within or near the WSP plan area or gen-tie corridors. The Recovery Plan area shows the foothills to the west as a north-south movement corridor (USFWS 1998). The nearest significant riparian corridor that likely facilitates regional movement of wildlife is the Kings River to the northeast of the plan area. This riparian area is located 1.3 miles to the east of the plan area at its nearest point**.**

Jurisdictional Waters

Jurisdictional waters include rivers, creeks, and drainages that have a defined bed and bank and which, at the very least, carry ephemeral flows. Jurisdictional waters also include lakes, ponds, reservoirs, and wetlands. Such waters may be subject to the regulatory authority of the U.S. Army Corps of Engineers (USACE), the California Department of Fish and Wildlife (CDFW), and the California Regional Water Quality Control Board (RWQCB). See Section *3.4.2. Regulatory Context* below for detailed discussion of these agencies' roles and responsibilities. Formal wetland delineations of the plan area and gen-tie corridors have not been conducted, but the jurisdictional status of onsite waters has been surmised by LOA based on their multi-year site surveys and investigation of aerial photography and maps.

In the vicinity of the plan area, the nearest known Water of the U.S. is the Kings River to the north and east of the plan area. A number of irrigation canals run through the plan area; however, these canals do not receive water from the Kings River, which is at a lower elevation than the Plan area. Artificial waterways such as canals are typically not claimed by the agencies unless they receive water from a Known Water of the U.S., and then return water to a Known Water of the U.S. Thus, even if the onsite canals received water from a Known Water of the U.S., the Kings River, those waters would not return to

the Kings River. Therefore, it is unlikely that the onsite canals would fall under the jurisdiction of the USACE under the federal Clean Water Act. In addition, the adjacent tailwater pond would also likely fall outside the jurisdiction of the USACE due to its isolation from a Known Water of the U.S. Although the waters of the plan area are likely not regulated by the USACE, they may be claimed as jurisdictional by the RWQCB under the broader definition of Waters of the State under the Porter-Cologne Water Quality Act, which encompasses any surface or groundwater within the boundaries of the state. Thus, although the canals and tailwater pond may not fall under federal jurisdiction, the RWQCB may assert jurisdiction over those portions of the canals and tailwater pond that function as wetlands. The CDFW typically only asserts jurisdiction over ponds, lakes, and natural drainages or manmade features that replace natural drainages and, therefore, is unlikely to regulate alterations to the manmade canals mentioned above.

In the vicinity of the gen-tie corridors, the nearest known Water of the U.S., besides the California Aqueduct, is Los Gatos Creek which runs to the north and west of the gen-tie corridors, and is 4 miles from the gen-tie corridors at its nearest approach. Since there is no hydrologic connection between the gen-tie corridors and Los Gatos Creek, and the since the gen-tie projects will avoid the California Aqueduct, it is unlikely that any portion of the gen-tie corridors would fall under the jurisdiction of the USACE.

In summary, alteration of the canals within the plan area and the gen-tie corridors is unlikely to be regulated by the USACE; however, the RWQCB and CDFW may assert jurisdiction over some of these features. Jurisdiction would need to be evaluated on a case-by-case basis. It is important to note that these three agencies are the final arbiters and would need to be consulted regarding their jurisdiction over some or all of these features.

3.4.2. REGULATORY CONTEXT

Federal and State Regulations

Threatened and Endangered Species

State and federal "endangered species" legislation has provided the California Department of Fish and Wildlife (CDFW) and the U.S. Fish and Wildlife Service (USFWS) with a mechanism for conserving and protecting plant and animal species of limited distribution and/or low or declining populations. Species listed as threatened or endangered under provisions of the State and Federal endangered species acts, candidate species for such listing, state species of special concern, and some plants listed as endangered by the California Native Plant Society are collectively referred to as "species of special status." Permits may be required from CDFW and/or USFWS if activities associated with a proposed project will result in the "take" of a listed species. "Take" is defined by the State of California as "to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill" (California Fish and Game Code, Section 86). "Take" is more broadly defined by the federal Endangered Species Act to include "harm" (16 USC, Section 1532(19), 50 CFR, Section 17.3). In addition, the CDFW and the USFWS are responding agencies under the California Environmental Quality Act (CEQA). Both agencies review CEQA documents in order to determine the adequacy of their treatment of endangered species issues and to make project-specific recommendations for their conservation.

Migratory Birds

Most birds are also protected by State and federal law. The federal Migratory Bird Treaty Act (MBTA: 16 U.S.C., sec. 703, Supp. I, 1989) prohibits killing, possessing, or trading in migratory birds, except in accordance with regulations prescribed by the Secretary of the Interior. This act encompasses whole birds, parts of birds, and bird nests and eggs.

Birds of Prey

Birds of prey are also protected in California under provisions of the State Fish and Game Code, Section 3503.5, 1992), which states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto." Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "taking" by the CDFW.

Wetlands and Other "Jurisdictional Waters"

The discharge of dredged or fill materials into areas delineated as "Waters of the United States" is subject to regulation under Section 404 of the federal Clean Water Act (CWA). Natural drainage channels and adjacent wetlands that are delineated as "Waters of the United States" (hereafter referred to as "jurisdictional waters") are subject to the jurisdiction of the U.S. Army Corps of Engineers (USACE). The extent of jurisdiction has been defined in the Code of Federal Regulations and has been subject to interpretation of the federal courts. Jurisdictional waters generally include:

- All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
- All interstate waters including interstate wetlands;
- All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce;
- All impoundments of waters otherwise defined as waters of the United States;
- Tributaries of waters identified above.

As determined in 2001 by the United States Supreme Court in *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers* (the SWANCC decision) held that channels and wetlands isolated from other jurisdictional waters cannot be considered jurisdictional on the basis of their use, hypothetical or observed, by migratory birds.

The USACE regulates the filling or grading of jurisdictional waters under the authority of Section 404 of the Clean Water Act. The extent of jurisdiction within drainage channels is defined by "ordinary high water marks" on opposing channel banks. Wetlands are habitats with soils that are intermittently or permanently saturated, or inundated. The resulting anaerobic conditions select for plant species known as hydrophytes that show a high degree of fidelity to such soils. Wetlands are identified by the presence of hydrophytic vegetation, hydric soils (soils saturated intermittently or permanently saturated by water), and wetland hydrology according to methodologies outlined in the 1987 Corps of Engineers

Wetlands Delineation Manual. All activities that involve the discharge of fill into jurisdictional waters are subject to the permit requirements of the USACE. Such permits are typically issued on the condition that the applicant agrees to provide mitigation resulting in no net loss of wetland functions or values.

All activities that involve the discharge of fill into jurisdictional waters are subject to the permit requirements of the USACE (Wetland Training Institute, Inc. 1991). Such permits are typically issued on the condition that the applicant agrees to provide mitigation that result in no net loss of wetland functions or values. No Section 404 permit can be issued until the California Regional Water Quality Control Board issues a Water Quality Certification (or waiver of such certification) under Section 401 of the Clean Water Act, certifying that the proposed activity will meet state water quality standards. The filling of isolated wetlands, over which the USACE has disclaimed jurisdiction under the SWANCC decision, is still regulated by the RWQCB under the Porter-Cologne Water Quality Act. Under the Porter-Cologne Act, it is unlawful to fill isolated wetlands without filing a Notice of Intent with the RWQCB. The RWQCB may impose waste discharge requirements (WDRs) if fill material is to be placed into the Waters of the State.

In the wake of the SWANCC decision discussed above, the State Water Resources Control Board, in coordination with the CDFW, is currently in the process of preparing policy guidance for the definition and delineation of wetlands subject to State jurisdiction, as well as waste discharge requirements applicable to the filling of such wetlands. Based on the draft wetland protection policies, the State's definition of wetlands is expected to closely follow the federal definition of wetlands under Section 404 of the Clean Water Act, except that the State definition will apply to isolated wetlands (i.e., areas no longer under federal jurisdiction) and may apply to surface waters lacking vegetation (i.e., unvegetated areas experiencing prolonged soil saturation and/or prolonged inundation). While the state definition of a wetland has yet to be finalized, it appears that all surface waters of the state, whether natural or man-made, vegetated or un-vegetated could be defined as a wetland subject to the jurisdiction to the state of California.

As noted above, the canals and ditches within the WSP plan area are unlikely to be regulated by the USACE; however, the RWQCB and CDFW may assert jurisdiction over some of these features. In the vicinity of the gen-tie corridors, Los Gatos Creek is likely to be claimed as jurisdictional by USACE, while the RWQCB and CDFW would likely claim jurisdiction over all drainage features traversed by the gen-tie corridors. Jurisdiction would need to be evaluated on a case-by-case basis. It is important to note that these three agencies are the final arbiters and would need to be consulted regarding their jurisdiction over some or all of these features in conjunction with the Conditional Use Permit processes for individual solar projects and gen-tie projects.

California Department of Fish and Wildlife

The California Department of Fish and Wildlife (CDFW) has jurisdiction over the bed and bank of natural drainages under Section 1601 through 1603 of the California Fish and Game Code. Activities potentially disturbing these drainages are regulated by the CDFW via a Lake or Streambed Alteration Agreement. Such a permit typically includes conditions that certain measures will be implemented for the protection of the habitat values of the drainage in question. Since there are no natural drainage channels within the plan area or the gen-tie corridors, no Streambed Alteration Agreement would be required from CDFW.

Habitat Conservation Plans (HCPs) and Natural Community Conservation Plans (NCCPs)

As discussed above, the federal Endangered Species Act mandates protection of threatened and endangered species and their habitat on federal and private land by prohibiting "take" of listed species through direct harm to individuals or habitat destruction. In an attempt to balance species protection with private landowner development interests, Congress amended Section 10(a)(1)(B) of the Endangered Species Act in 1982 to allow private landowners to destroy some endangered species habitat through a permitting system. Under this amendment, private landowners developing, logging, or otherwise negatively affecting land known to be home to listed species, are required to design and implement a Habitat Conservation Plan (HCP) that will minimize and mitigate harm to the impacted species during the proposed project.

The State of California's Natural Community Conservation Planning Act (NCCP Act), enacted in 1991, authorized of the Department of Fish and Wildlife to establish a program that takes a broad-based ecosystem approach to planning for the protection and perpetuation of biological diversity. The NCCP program is a cooperative effort involving numerous private and public partners. An NCCP identifies and provides for the regional or area-wide protection of plants, animals, and their habitats, while allowing compatible and appropriate economic activity. The NCCP Act, while not intended to supersede the requirements of the federal and state Endangered Species Acts, is intended to allow for comprehensive, regional multi-species planning in a manner which satisfies the requirements of these endangered species laws.

Neither the WSP plan area nor the gen-tie corridors are covered by any existing Habitat Conservation Plan (HCP) or Natural Community Conservation Plan (NCCP).

Recovery Plan area for Upland Species of the San Joaquin Valley

The *Recovery Plan area for Upland Species of the San Joaquin Valley* covers 34 species of plant and animals that occur in the San Joaquin Valley. The majority of these species occur in arid grasslands and scrublands of the San Joaquin Valley and the adjacent foothills and valleys. The plan includes information on recovery criteria, habitat protection, umbrella and keystone species, monitoring and research program, adaptive management, and economic and social considerations.

The only species addressed in the Recovery Plan that potentially occurs in the WSP and gen-tie corridors vicinity is the San Joaquin kit fox. Although no sightings of this species have been recorded in the immediate vicinity of the WSP plan area, there are several sightings from 1981 near the California Aqueduct in the vicinity of the gen-tie corridors. The Recovery Plan does not identify any lands in the immediate vicinity of the WSP plan area or gen-tie corridors as areas that should be protected as Specialty Reserve Areas, Wildlife-Compatible Farmland to be Maintained, or Areas Where Connectivity and Linkages Should be Promoted. The nearest area identified as a connectivity and linkage area is the Kettleman Hills to Anticline Ridge Movement Corridor, located west of I-5, approximately 4 miles west of the western end of the gen-tie corridors at the Gates Substation (USFWS 1998).

PG&E San Joaquin Valley Operation and Maintenance HCP

The PG&E San Joaquin Valley Operation and Maintenance HCP is the only HCP that covers the area of the gen-tie corridors. While some elements of the WSP solar projects and gen-tie projects (e.g., transmission lines, substations, switching stations) may be constructed and/or operated by PG&E, the

HCP would not cover construction of these major facilities; therefore, this HCP does not apply to the WSP solar development or gen-tie projects.

Kings County

Since the Westlands Solar Park is located entirely within Kings County, the County has discretionary approval authority for all WSP solar projects. Therefore, the County's plans, policies, and regulations pertaining to biological resources are applicable to WSP solar development.

Kings County General Plan

The 2035 Kings County General Plan contains the following goals, objectives, and policies related to biological resources that are relevant to the Westlands Solar Park:

Resource Conservation Element

D. Natural Plant and Animal Habitats

RC GOAL D1 Preserve land that contains important natural plant and animal habitats.

RC OBJECTIVE D1.1 Require that development in or adjacent to important natural plan area and animal habitats minimize the disruption of such habitats.

RC Policy D1.1.1: Evaluate all discretionary land use applications in accordance with the screening procedures contained in the Biological Resources Survey located in Appendix C. If the results of the project screening indicates the potential for important biological resources to exist on the site a biological evaluation (consistent with Appendix C) shall be performed by a qualified biologist. If the evaluation indicates that the project could have a significant adverse impact, mitigation shall be required or the project will be redesigned to avoid such impacts. Mitigation shall be provided consistent with the California Environmental Quality Act (CEQA), and applicable state and federal guidelines as appropriate. Mitigation may include habitat improvement or protection, acquisition of other habitat, or payment to an appropriate agency to purchase, improve, or protect such habitat.

RC Policy D1.1.2: Require project applicants to consult with the California Department of Fish and Game and the United States Fish and Wildlife Service and to obtain appropriate authority for any such take pursuant to Endangered Species Act requirements if new development or other actions are likely to result in incidental take of any threatened or endangered species.

_____

RC GOAL D2 Maintain the quality of existing natural wetland areas as required by the California Department of Fish and Game, the United States Fish and Wildlife Service and the United States Army Corp of Engineers.

RC OBJECTIVE D2.1 Maintain compatible land uses in natural wetland habitats designated by state and federal agencies.

RC Policy D2.1.1: Follow state and federal guidelines for the protection of natural wetlands. Require developers to obtain authorization from the appropriate local, state, or federal agency prior to commencement of any wetland fill activities.

RC Policy D2.1.2: Use the California Environmental Quality Act (CEQA) process to assess wetland resources, and require mitigation measures for development which could adversely impact a designated wetland.

RC Policy D2.1.3: "Prior Converted Croplands" as defined by state and federal regulations shall be exempt from consideration as wetlands under the County planning process.

E. Threatened and Endangered Species

RC GOAL E1 Balance the protection of the County's diverse plant and animal communities with the County's economic needs.

RC OBJECTIVE E1.1 Require mitigation measures to protect important plant and wildlife habitats.

RC Policy E1.1.1: Complete the inquiry process outlined in Appendix C in the initial project review for development permits to determine whether the project is likely to have a significant adverse impact on any threatened or endangered species habitat locations, and to assure appropriate consideration of habitat preservation by development. Maintain current copies of California Department of Fish and Game and United States Fish and Wildlife Service maps showing locations of known threatened and endangered species habitat. If shown to be necessary, require the developer to consult with the California Department of Fish and Game, the United States Fish and Wildlife Service, and the United States Army Corps of Engineers as to potential impacts, appropriate mitigation measures, and required permits.

RC Policy E1.1.2: Require as a primary objective in the review of development projects the preservation of healthy native oaks and other healthy native trees.

RC Policy E1.1.3: Maintain to the maximum extent practical the natural plant communities utilized as habitat by threatened and endangered species (see Appendix C for a listing and map of these plant communities).

Kings County Code

The Kings County Code and the Kings County Development Code include no specific requirements related to the protection of trees or biological resources.

Fresno County

Since no portion of the Westlands Solar Park is located within Fresno County, the County's plans, policies and regulations are not applicable to WSP solar development. Transmission projects that are to be

constructed or co-sponsored by an investor-owned utility (IOU) such as PG&E are subject to the sole permitting jurisdiction of the California Public Utilities Commission (CPUC) and are exempt from local jurisdiction. However, CPUC General Order 131-D requires public utilities to coordinate with local jurisdictions regarding consistency of their projects with local plans and policies. Transmission lines that may be privately owned (such as gen-ties) are not under CPUC jurisdiction, and thus are subject to Fresno County jurisdiction and may require the issuance of a conditional use permit from the County.

Fresno County General Plan

The Open Space and Conservation Element of the Fresno County General Plan contains a number of policies related to Natural Resources. These policies are directed specifically to the protection of special habitat areas such as wetlands and riparian areas, as well as fish and wildlife habitat. The Open Space and Conservation Element is directly accessible at the following web address: http://www2.co.fresno.ca.us/4510/4360/General_Plan/GP_Final_policy_doc/Open_Space_Element_rj.pdf

Fresno County Code

The Fresno County Ordinance Code contains the following provisions related to the protection of trees and biological resources. Section 13.12.040 requires tree permits for removal of any trees within county roadways that have been declared to be scenic drives by the Board of Supervisors. Section 17.20.020 provides that a proposed tentative or final map may be rejected "if the design of the subdivision or the proposed improvements are likely to cause substantial environmental damage or substantially unavoidably injure fish or wildlife or their habitat." The Fresno County Ordinance Code includes no other specific provisions or requirements related to the protection of trees or biological resources.

3.4.3. Environmental Impact Analysis

Significance Criteria

Based on the State CEQA Guidelines, Appendix G, the project would be considered to have a significant impact on biological resources if it would:

a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service. (Impacts BIO-1 through BIO-7)

b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service. (Impact BIO-9)

c. Have a substantial adverse effect on federally-protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means. (Impact BIO-9)

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. (Impact BIO-8)

e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. (Impact BIO-10)

f. Conflict with the provisions of an adopted Habitat Conservation Plan, or other approved local, regional, or state habitat conservation plan. (Impact BIO-11)

IMPACTS AND MITIGATION

Impact BIO-1. Impacts to Special Status Plants

***Westlands Solar Park*. The WSP solar development would not adversely affect special-status plants or their habitat since no special-status plant species or their habitat are present within the WSP plan area. (*Less-than-Significant Impact*)**

***WSP Gen-Tie Corridors*. The gen-tie projects would not adversely affect special-status plants or their habitat since no special-status plant species or their habitat are present within the gen-tie corridors or vicinity. (*Less-than-Significant Impact*)**

This impact analysis, together with subsequent analyses, addresses significance criterion 'a' above.

Westlands Solar Park and WSP Gen-Tie Corridors

Three special-status vascular plant species are known to occur in the general vicinity of the plan area and gen-tie corridors, including: California jewel-flower, San Joaquin woolly threads, and round leaved filaree (see Table BIO-1). Due to the many decades of agricultural disturbance of the plan area and gen-tie corridors, habitat for these three plant species is absent from the area. Therefore, the planned WSP land uses and development of individual solar projects would not affect regional populations of these species. The potential impacts of WSP solar development upon special-status plants and their habitat would be *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

Impact BIO-2. Impacts to Special Status Animals Habitat

***Westlands Solar Park*. The WSP solar development would have a potentially adverse impact on 13 special-status animal species which may utilize the plan area as breeding and/or foraging habitat. (*Less-than-Significant Impact with Mitigation*)**

***WSP Gen-Tie Corridors*. The WSP gen-tie projects would have a potentially adverse impact on 13 special status animal species which may utilize the gen-tie corridors as breeding and/or foraging habitat. (*Less-than-Significant Impact with Mitigation*)**

This impact analysis, together with related analyses, addresses significance criterion 'a' above.

Westlands Solar Park and WSP Gen-Tie Corridors

Of the 33 special-status animal species listed in Table BIO-1 that potentially occur in the region, 18 species would be absent or unlikely to occur within the plan area due to unsuitable habitat conditions. These include the vernal pool fairy shrimp, valley elderberry longhorn beetle, California tiger salamander, western spadefoot, silvery legless lizard, coast horned lizard, blunt-nosed leopard lizard, giant garter snake, American white pelican (nesting), black swift, Vaux's swift, western yellow-billed cuckoo, Nelson's antelope squirrel, giant kangaroo rat, Fresno kangaroo rat, Tulare grasshopper mouse, San Joaquin kit fox, and ringtail. Development of individual solar projects within the plan area would have no effect on loss of habitat for these species because there is little or no likelihood that they are present. Therefore, the potential impact upon regional populations of these species would be *less than significant*.

Two species that may regularly or occasionally utilize the plan area for foraging only, other than the Swainson's hawk, include mountain plover and white-faced ibis. (The potential impacts to Swainson's hawk are discussed under Impact BIO-4, below.) The WSP plan area does not provide regionally important foraging habitat for mountain plover and white-faced ibis. Migrant species such as the mountain plover pass through or over many types of habitats en route to breeding or wintering habitat. White-faced ibis may possibly forage in agricultural fields of the plan area from time to time, this species would still have abundant foraging habitat in the region after full buildout of the Westlands Solar Park. Considerable habitat suitable for migratory movements and winter foraging would continue to be available for these species on other lands within the region following WSP solar development and construction of the associated gen-tie projects. Therefore, development of individual WSP solar projects would result in a *less-than-significant* impact to these species.

An additional 13 special-status animal species listed in Table BIO-1 potentially occur frequently as regular foragers and may be resident to the area. These include the western pond turtle, San Joaquin whipsnake, western snowy plover, Swainson's hawk, northern harrier, white-tailed kite, burrowing owl, loggerhead shrike, tricolored blackbird, Townsend's big-eared bat, pallid bat, California mastiff bat, and American badger. Given the very large area of the plan area (33 sq. mi.), the WSP solar development would result in a substantial reduction of foraging, denning, and/or roosting habitat available regionally, depending on the species. However, the WSP solar development would not affect existing ditches and canals, which would continue to be operated and managed as they are under current conditions. Thus the foraging, nesting, denning, breeding, and roosting habitat for resident special-status species (as well

as other native wildlife) provided by these canals would be maintained. However, impacts to several of the special-status species utilizing the site for regular foraging and breeding would be *potentially significant*. These species include Swainson's hawk, burrowing owl, American badger, and the other bird species noted above. Impacts to these species are addressed subsequently in this section. With respect to the Gen-Tie Corridors, the burrowing owl, other raptors and migratory birds would be potentially subject to impacts if gen-tie construction occurred in the vicinity of existing nests. With the implementation of MM BIO-1 below, the potential impacts would be reduced to *less-than-significant*.

Mitigation Measures:

***Westlands Solar Park*. Implement MMs BIO-1 (pre-project design measures), BIO-2 (raptors and migratory birds), BIO-3 (Swainson's hawk), BIO-4 (burrowing owl), BIO-5 (San Joaquin kit fox), and BIO-11 (American badger).**

***WSP Gen-Tie Corridors*. Implement MMs BIO-1 (pre-project design measures), BIO-2 (raptors and migratory birds), BIO-3 (Swainson's hawk), BIO-4 (burrowing owl), BIO-5 (San Joaquin kit fox), and BIO-11 (American badger).**

MM BIO-1: Pre-Project Design and Construction-Level Mitigation Measures. Prior to the final planning and design of any WSP solar or gen-tie project, the following measures shall be implemented to minimize impacts to special-status animal species:

a. Conduct Seasonal Surveys for Potentially Affected Species. Prior to final planning and design of any solar or gen-tie project, full coverage ground biological surveys shall be conducted by a qualified biologist within the potential disturbance areas of the solar or gen-tie project to identify the presence or absence of individuals or habitat of special-status animal species. Surveys for each potentially affected species shall be conducted during seasons that are optimal for identification of individuals and habitat of the species.

b. Identify Project Design Measures. The results of the biological surveys shall be utilized in the final planning and design of the solar and gen-tie projects for the purpose of avoiding and minimizing the potential impacts to special-status animal species and their habitat to the extent feasible.

c. Identify Construction Level Mitigation Measures. The results of the biological surveys shall be utilized in the project review and approval process to provide the basis for identifying construction-level mitigation measures to be implemented during project construction, operation, and decommissioning. Examples of mitigation measures that can be implemented at the project-specific level include the following:

- **Restrict outdoor lighting except as needed for safety.**
- **Require that all lights be shielded, pointed downward, and directed away from adjacent habitat.**
- **Require motion sensor-type nighttime lighting so that the lights do not stay on constantly and interfere with nocturnal wildlife activities.**

- **Install perimeter fencing so that the bottom of the fence is 5 to 7 inches above the ground surface and knuckled under to create a smooth edge to allow for unimpeded movement of wildlife through the project sites.**
- **Require that all vertical pipes associated with solar mounts or chain-link fencing be capped at the time of installation to prevent entrapment and death of birds.**
- **Restrict the use of rodenticides in accordance with the Pest Management and Weed Abatement Plans required by Kings County for each solar project.**

Impact BIO-3. Disturbance to Active Raptor and Migratory Bird Nests

***Westlands Solar Park*. The WSP solar development could result in disturbance to active nests of raptors and migratory birds. (*Less-than-Significant Impact with Mitigation*)**

***WSP Gen-Tie Corridors*. The construction of the gen-tie projects could result in disturbance to active nests of raptors and migratory birds. (*Less-than-Significant Impact with Mitigation*)**

This impact analysis, together with related analyses, addresses significance criterion 'a' above.

Westlands Solar Park and WSP Gen-Tie Corridors

In addition to the Swainson's hawk and burrowing owl (which are discussed in turn below under Impacts BIO-4 and BIO-5), several other raptor species such as the northern harrier, prairie falcon, peregrine falcon, and red-tailed hawk were observed foraging over the plan area and gen-tie corridors; and barn owls, great horned owls, and red-tailed hawks were observed nesting at the off-site tailwater pond during the multi-year surveys from 2010 through 2017. Additionally, the plan area provides nesting habitat for a number of migratory bird species. Nearly all native bird species are protected by the federal Migratory Bird Treaty Act. The trees surrounding the off-site tailwater pond as well as large trees in existing orchards within and adjacent to the plan area and the gen-tie corridors provide potential nesting habitat for these species. Emergent vegetation and barren ground also provide nesting habitat for some bird species. Although the WSP solar and gen-tie projects will avoid the habitats most suitable for nesting raptors and other birds, some portions of the plan area and gen-tie corridors such as orchards provide suitable nesting habitat and fallow fields, and other undisturbed areas provide suitable nesting habitat for several ground-nesting birds. If birds were to nest in these areas in the future prior to construction, project-related activities could result in the abandonment of active nests or direct mortality to these birds. Construction and decommissioning activities that adversely affect the nesting success of raptors or result in mortality of individual birds constitute a violation of state and federal laws and would be considered a *significant impact* under CEQA. With the implementation of MM BIO-2 below, the potential impact would be reduced to *less-than-significant*.

[Note: A related issue is the potential for avian collision and electrocution on power lines. It is anticipated that the project proponents for construction of WSP gen-tie projects will prepare and implement avian protection plans based on the current industry guidance regarding best practices in order to minimize bird mortality and injury.]

Mitigation Measures:

***Westlands Solar Park*. Implement MM BIO-2 (a-d)(raptors and migratory birds).**

***WSP Gen-Tie Corridors*. Implement MM BIO-2 (a-c) (raptors and migratory birds).**

MM BIO-2. Avoidance Measures for Raptor and Migratory Bird Nests. The following measures shall be implemented to minimize disturbance to any active raptor and other bird nests, as necessary, prior to the construction and decommissioning of any WSP solar project or gen-tie project:

a. Pre-Construction Surveys for Active Nests. If tree removal, site preparation, grading, construction, or decommissioning is planned to occur within the breeding period (i.e., between February 1 and August 31), a qualified biologist shall be retained to conduct pre-construction surveys for active nests of migratory birds within 14 days of the onset of these activities. If construction or decommissioning activity is planned to commence outside the breeding period, no pre-construction surveys are required for nesting birds and raptors.

b. Exclusion Zones for Active Nests. If any active nests are discovered in or near the planned construction zones on or adjacent to a project site, the biologist shall consult with the California Department of Fish and Wildlife to identify a suitable construction-free buffer around the nest. This exclusion zone shall be identified on the ground with flagging or fencing, and shall be maintained until the biologist has determined that the young have fledged.

c. Tailgate Training for Workers. All construction and operations workers on shall be trained by a qualified biologist. The tailgate training shall include a description of the Migratory Bird Treaty Act, instructions on what to do if an active nest is located, and the importance of capping pipes and pipe-like structures standing upright in order to avoid birds falling into the pipes and getting stuck.

d. Capping of Hollow Poles and Posts. Should any vertical tubes, such as solar mount poles, chain link fencing poles, or any other hollow tubes or poles be utilized on a project site, the poles shall be capped immediately after installation to prevent entrapment of birds.

Impact BIO-4. Impacts to Swainson's Hawks

***Westlands Solar Park*. The WSP solar development could result in: 1) disturbance to Swainson's hawk breeding if active Swainson's hawk nests are found on or adjacent to the WSP plan area prior to solar development (*Less-than-Significant Impact with Mitigation*) and; 2) the loss of Swainson's hawk foraging habitat. (*Less-than-Significant Impact*)**

***WSP Gen-Tie Corridors*. The construction of the WSP gen-tie projects could result in disturbance to Swainson's hawk breeding if active Swainson's hawk nests are found on or adjacent to the gen-tie corridors prior to construction (*Less-than-Significant Impact with Mitigation*). The gen-tie projects would not have an adverse effect on Swainson's hawk foraging habitat (*Less-than-Significant Impact*).**

This impact analysis, together with related analyses, addresses significance criterion 'a' above.

Westlands Solar Park

Nesting Habitat

As discussed in Section *3.4.1. Environmental Setting*, Swainson's hawks are known to nest within a half-mile of the plan area. Swainson's hawks were also observed over the off-site tailwater pond during the LOA field surveys in 2010-2014 and were observed landing in a tree at the pond in 2015. A few willows occur singly in plan area, but these trees provide unlikely nesting habitat for Swainson's hawks. Larger trees associated with agricultural and residential structures occur on lands adjacent to the plan area and gen-tie corridors. The most likely habitat for nesting Swainson's hawks occurs in large Gooding's willows in riparian habitat around the off-site tailwater pond and the cottonwood tree just east of the southern end of the project site, which has supported an active Swainson's hawk nest for several years. Project-related activities occurring near these areas, could result in the abandonment of active Swainson's hawk nests or direct mortality to these birds should they be nesting in onsite or adjacent trees. Construction activities that adversely affect their nesting success or result in mortality of individual birds constitute a violation of state and federal laws and would be considered a *significant impact* under CEQA. With the implementation of MM BIO-3 below, the potential impact would be reduced to *less than significant*.

Foraging Habitat

As discussed above, there is a cottonwood tree adjacent to the southern tip of the plan area that has been used by Swainson's hawks for nesting in recent years. There is also potential for Swainson's hawks to nest at the adjacent tailwater pond and possibly other trees in the immediate vicinity of the plan area. During the scheduled 12-year development period, WSP solar projects could result in the loss of Swainson's hawk foraging habitat. However, as discussed below, LOA biologists conducted a detailed analysis of foraging habitat within a 10-mile radius of the plan area and concluded that the abundant foraging habitat that would remain after development of the WSP, along with all the other cumulative projects within this 10 mile radius, would be more than sufficient to support all of the known Swainson's hawk nests within this radius, with surplus capacity to support additional nesting pairs. Based on this analysis, the impact of WSP solar development on Swainson's hawk foraging habitat would be *less than significant*.

Cumulative Impacts to Foraging Habitat

The biological evaluation by LOA included an analysis of whether the cumulative impacts to Swainson's hawk foraging habitat resulting from WSP solar projects and other pending, approved, and completed projects in the vicinity would represent a significant loss of foraging habitat. The following discussion summarizes the detailed discussion of study methodology, analysis, and findings contained in LOA's biological report in Appendix D.

The LOA analysis began with an inventory of known Swainson's hawk nests within a 10-mile radius of the plan area. As discussed, there are 32 documented nests within this radius, none of which are located within the WSP plan area. The next step was to map and categorize all the lands within the 10-mile radius study area by land use cover type, and calculate the total acreage of land use cover types that are considered suitable as foraging habitat for Swainson's hawk.

In its analysis of potential cumulative impacts to Swainson's hawk foraging habitat, LOA first made a determination as to the amount of surplus foraging habitat available that is not considered to be required by existing Swainson's hawks that are currently nesting in the area. LOA calculated that there is currently a surplus of 187,536 acres of suitable foraging habitat within the study area. Table BIO-2 contains a summary of LOA's detailed habitat calculations.

TABLE BIO-2
CUMULATIVE SWAINSON'S HAWK FORAGING HABITAT CALCULATIONS – SUMMARY

	Foraging Habitat	Acres	Percent
a.	Available Foraging Habitat within Study Area	340,304	-
b.	Unadjusted Foraging Habitat required to support 32 SWHA pairs	218,240	-
c.	Adjusted Foraging habitat required to support 32 SWHA pairs (adjusted for 30% range overlap)	152,768	-
d.	Surplus SWHA foraging habitat (a-c)	187,536	-
e.	Cumulative impact of WSP projects and 21 other solar projects (on foraging habitat)(assumes that all acreage within the cumulative projects is suitable foraging habitat).	31,472	-
f.	Remaining available foraging habitat following cumulative impacts (a-e)	308,832	90.8%
g.	Remaining available surplus SWHA foraging habitat following cumulative impacts (d-e)	156,064	83.2%

Source: Live Oak Associates 2017

In order to determine the potential cumulative impacts to foraging habitat, all of the pending, approved, and completed solar projects within the study area were identified and mapped. It was determined that the 22 cumulative projects (including the WSP plan area) occupy a total of 31,472 acres within the study area. If it is assumed that 100 percent of the lands occupied by solar projects within the study area represent potential foraging habitat, these projects equal approximately 9.2 percent of the total foraging habitat and 16.8 percent of the surplus foraging habitat in the study area.

In order to determine if this cumulative loss of foraging habitat represented a significant cumulative impact, LOA applied the established threshold where a reduction of surplus habitat to less than 70 percent relative to pre-project conditions would represent a cumulatively significant impact. In other words, if the cumulative projects collectively reduced the surplus foraging habitat in the study area to less than 70 percent of 187,536 acres (or to less than 131,275 acres), this would constitute a cumulatively significant impact.

As shown in Table BIO-2, it was calculated that the cumulative projects would reduce the total surplus foraging habitat in the study area to 156,064 acres (i.e., 187,536-acre pre-project surplus minus 31,472 acres cumulative loss). This remaining acreage of surplus foraging area represents 83.2 percent of the pre-project total. Since the remaining surplus foraging acreage is greater than 70 percent of the pre-project surplus foraging acreage in the study area, the cumulative impact to the Swainson's hawk foraging acreage in the study area was determined to be *less than significant*.

WSP Gen-Tie Corridors

Nesting Habitat

Swainson's hawks are known to nest within the region of the gen-tie corridors. Although a ground survey has not been completed for the gen-tie corridors, several lone trees and groups of trees, especially along riparian areas or fence lines may provide suitable nesting habitat for Swainson's hawks. Construction-related activities occurring near these areas, could result in the abandonment of active Swainson's hawk nests or direct mortality to these birds should they be nesting in or near the gen-tie corridors. Construction activities that adversely affect Swainson's hawk nesting success or result in mortality of individual birds constitute a violation of state and federal laws and would be considered a *significant impact* under CEQA. With the implementation of MM BIO-3 below, the potential impact would be reduced to *less than significant*.

Foraging Habitat

The gen-tie projects would result in a relative small loss of potential foraging habitat, with approximately 2 acres permanently occupied by transmission tower footings over a distance of 23 miles. Thus the impact of the gen-tie projects upon Swainson's hawk foraging habitat would be *less than significant*.

Mitigation Measures:

Westlands Solar Park. **Implement MM BIO-3 (Swainson's hawk).**

WSP Gen-Tie Corridors. **Implement MM BIO-3 (Swainson's hawk).**

MM BIO-3. Swainson's Hawk Mitigation. In order to reduce the impacts of WSP solar and gen-tie projects to Swainson's hawk breeding habitat to less-than-significant levels, the following mitigation measures shall be implemented in conjunction with each project:

a. Preconstruction Surveys for Swainson's Hawk. During the nesting season prior to construction or decommissioning within 0.5 miles of a potential nest tree, preconstruction surveys shall be conducted within the project site and lands within a 0.5-mile radius of the site to identify any nesting pairs of Swainson's hawks. These surveys shall conform to the requirements of CDFW as presented in *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley,* Swainson's Hawk Technical Advisory Committee, May 31, 2000. Preconstruction surveys are not required for portions of projects that are more than 0.5 miles from a potential nest tree.

b. Nest Avoidance Measures. If any active Swainson's hawk nests are discovered in within 0.5 miles of any planned construction or decommissioning activity, appropriate avoidance/protective measures shall be implemented as identified by a qualified biologist in consultation with the California Department of Fish and Wildlife. The avoidance/protective measures shall remain in place until the biologist has determined that the young have fledged.

c. Tailgate Training for Workers. All workers shall attend a tailgate training session conducted by a qualified biologist. The training is to include a description of the species, a brief summary of their biology, and minimization measures and instructions on what to do if a Swainson's hawk is observed on a solar project site.

Impact BIO-5. Impacts to Burrowing Owls

***Westlands Solar Park*. The WSP solar development could result in the following impacts to burrowing owls: 1) disturbance to active nests of burrowing owls; 2) mortality of individual burrowing owls, and; 3) reduction of foraging habitat for burrowing owls. (*Less-than-Significant Impacts with Mitigation*)**

***WSP Gen-Tie Corridors*. The WSP gen-tie projects could result in the following impacts to burrowing owls: 1) disturbance to active nests of burrowing owls, and; 2) mortality of individual burrowing owls (*Less-than-Significant Impacts with Mitigation*). The WSP gen-tie projects would not adversely affect foraging habitat for burrowing owls (*Less-than-Significant Impact*).**

This impact analysis, together with related analyses, addresses significance criterion 'a' above.

Westlands Solar Park

A number of burrowing owls were observed occupying existing burrows within the WSP plan area during the field surveys conducted by LOA in 2010 through 2015. Many of these owls were paired and presumably nesting, with a minimum of 8 pair in 2011, a minimum of 12 pair in 2012, and a minimum of 8 pair in 2014. Since the entire WSP plan area was not surveyed for this programmatic review, the precise number of burrowing owls within the plan area is unknown. Suitable nesting habitat for burrowing owls was present in the fallow fields and along the canal banks in the form of California ground squirrel burrows.

Suitable foraging habitat is present over much of the WSP plan area. In order to identify the extent of suitable habitat within the WSP plan area, LOA used the most recently available USDA cropland data (2016) to map four categories of habitat suitability. The mapping indicated the following breakdown of habitat types within the WSP plan area: 1) year-round forage and burrow habitat – 51 percent; 2) Seasonal forage habitat only – 38 percent; 3) year-round burrow habitat only – 2 percent; 4) no forage or burrow habitat – 9 percent. The distribution of these habitat types within the WSP plan area are shown on Figure 9 in the LOA report in Appendix D.

The development of WSP solar projects could result in the loss of foraging and breeding habitat for burrowing owl. However, the WSP solar development would not affect existing canals and ditches, which would continue to be operated and managed as they are under current conditions. Since most known burrowing owl burrows within the WSP plan area are located along the canal banks, it is likely that most or all burrowing owl nests would be avoided by WSP solar development. Ground disturbance from project construction may also result in the mortality of burrowing owls, as they are known to retreat into their burrows ahead of approaching grading activity. These small raptors are protected under the federal Migratory Bird Treaty Act and the California Fish and Game Code. Mortality of individual birds would be a violation of state and federal law. The mortality of individual burrowing owls and the potential loss of known breeding and foraging habitat would constitute *significant impacts*. With the implementation of MM BIO-4 below, the potential impacts would be reduced to *less than significant*.

WSP Gen-Tie Corridors

The gen-tie projects would result in a limited amount of ground disturbance, primarily at the transmission tower construction sites. Ground disturbance from gen-tie project construction may result in the mortality of burrowing owls, which would constitute a *significant impact*. With the implementation of MM BIO-4 below, the potential impact would be reduced to *less than significant*.

The gen-tie projects would result in a relative small loss of potential foraging habitat, with approximately 2 acres permanently occupied by transmission tower footings over a distance of 23 miles. Thus the impact of the gen-tie projects upon burrowing owl foraging habitat would be *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. Implement MM BIO-4 (a-e)(borrowing owls and habitat).**

***WSP Gen-Tie Corridors*. Implement MM BIO-4 (a-d)(burrowing owls).**

MM BIO-4. Burrowing Owl Mitigation. The following measures shall be implemented to minimize impacts to the individual burrowing owls and burrowing owl breeding and foraging habitat, as necessary, prior to construction or decommissioning of any WSP solar or gen-tie project:

a. Pre-Construction Surveys for Burrowing Owl. Pre-construction surveys for burrowing owls shall be conducted by a qualified biologist no more than 14 days in advance of the on-set of ground-disturbing activity at each project site. These surveys shall be conducted according to methods described in the *Staff Report on Burrowing Owl Mitigation* (CDFG 2012). The surveys shall cover all areas of suitable burrowing owl habitat within project site.

b. Avoidance of Active Burrowing Owl Nests During Breeding Season. If pre-construction surveys are undertaken during the breeding season (February through August) and active nest burrows are located within or near construction or decommissioning zones, a construction-free buffer of 250 feet shall be

established around all active owl nests. These exclusion zones shall be enclosed with temporary fencing, and construction equipment and workers shall not be allowed to enter the enclosed setback areas. Exclusion zones shall remain in place for the duration of the breeding season. After the breeding season (i.e., once all young have left the nest), passive relocation of any remaining owls may take place, but only under the conditions described below.

c. Avoidance of Occupied Burrows During Non-Breeding Season, and Passive Relocation of Burrowing Owls. During the non-breeding season (September through January), any burrows occupied by resident owls in areas planned for construction or decommissioning disturbance shall be protected by a construction-free buffer with a radius of 250 feet around each burrow. Passive relocation of resident owls is not recommended by CDFW where it can be avoided. If passive relocation is not avoidable, resident owls may be relocated to alternative habitat nearby. The relocation of resident owls shall be conducted according to a relocation plan prepared by a qualified biologist.

d. Tailgate Training for Workers. All workers shall attend a tailgate training session conducted by a qualified biologist. The training is to include a description of the species, a brief summary of their biology, and minimization measures and instructions on what to do if a burrowing owl is observed on a solar project site.

e. Mitigation for Loss of Burrowing Owl Habitat. If it is determined that burrowing owl nest(s) are located on or near the solar project site, the biologist shall coordinate with the project applicant and resource agency to determine whether relocation of these nest(s) is unavoidable. If so, measure #1 below (restrictive covenants) would apply. If the on-site or nearby nest(s) are to remain in place, the biologist shall determine whether sufficient foraging habitat is available on adjacent or nearby lands, and if so, no further mitigation is required. (Approximately 200 acres of year-round foraging habitat within about 2 miles of the burrowing owl burrow is required to support a burrowing owl pair.) If it is determined that there is insufficient nearby foraging habitat, the biologist shall determine the amount of onsite foraging habitat that is required to sustain the burrowing owl nest. In this case, the potential impact to foraging habitat shall be either avoided through implementation of measure #2 below (onsite buffer zone), or compensated through implementation of measure #1 (restrictive covenants) or measure #3 (long-term agreement on adjacent lands) below:

1) Establishment of restrictive covenants with a 1:1 ratio for foraging/breeding habitat preservation. These restrictive covenants would include habitats determined to be suitable for foraging and/or breeding year-round and seasonal use.

2) Establishment of permanent buffer zones of adequate size around current burrowing owl locations. These buffer zones would require adequate management for the life of the project and buffer zones to ensure the buffer area remains suitable for burrowing owls. Annual monitoring of the suitability of management activities may be required by CDFW.

3) Short or long-term compensation for foraging habitat by providing farmers in adjacent lands incentives to plant particular crops known to be suitable forage habitat for burrowing owls (i.e. winter wheat, alfalfa, etc.) and to enact a farmer burrowing owl safety program where farmers are trained how to reduce burrowing owl mortalities on their lands and farm driveways. A 1:1 ratio would be required to be in the program as long as the project is active.

Impact BIO-6. Impacts to San Joaquin Kit Fox

***Westlands Solar Park*. The WSP solar development could result in potential impacts to individual kit foxes, and could result in impacts to kit fox habitat, if present. (*Less-than-Significant Impact with Mitigation*)**

***WSP Gen-Tie Corridors*. The WSP gen-tie projects could result in potential impacts to individual kit foxes, and could result in impacts to kit fox habitat, if present. (*Less-than-Significant Impact*)**

This impact analysis, together with related analyses, addresses significance criterion 'a' above.

Westlands Solar Park

As discussed in Section *3.4.1. Environmental Setting* above, the majority of the plan area is in cultivated fields which provides poor habitat for kit fox, while the fallow fields and canals within the plan area offer marginal habitat for this species. There are no reported sightings of kit fox within plan area, and the multi-year surveys conducted by LOA included no kit fox observations within or near the plan area. A few burrows were observed which would be suitable for kit fox, but these burrows appeared to be occupied by California ground squirrels or burrowing owls. Although no comprehensive field surveys for kit fox were conducted, it is unlikely that kit fox have or would take up residence within the plan area under current site conditions which limit the prey base. It is possible that kit foxes from populations in the region may occasionally pass through and possibly forage within the plan area during regular dispersal movements.

Since comprehensive field surveys for kit fox have not been conducted in the WSP plan area, and given the potential for dispersing individual kit foxes to traverse the plan area during the multi-year buildout period for the WSP, the potential presence of kit fox within the plan area at some time during WSP solar development cannot be ruled out. As such, the WSP solar development could have a potentially *significant impact* upon the San Joaquin kit fox. With the implementation of MM BIO-5 below, the potential impact would be reduced to *less than significant*.

[Note: Potential impacts to movement of wildlife species, including kit fox, through the WSP Plan area are addressed in Impact BIO-8 below.]

WSP Gen-Tie Corridors

The gen-tie corridors primarily pass through agricultural fields, where it is unlikely that kit fox would take up residence. However, kit fox may pass through and possibly forage within the area from time to time during regular dispersal movements. Therefore, construction of the gen-tie projects could result in harm or injury to individuals of this species. The potential for kit foxes to suffer mortality during project construction would constitute a *significant impact*. With the implementation of MM BIO-5 below, the potential impact would be reduced to *less than significant*.

Mitigation Measures:

***Westlands Solar Park*.** **Implement MM BIO-5 (kit fox).**

***WSP Gen-Tie Corridors*.** **Implement MM BIO-5 (kit fox).**

MM BIO-5. **San Joaquin Kit Fox Mitigation. In order to minimize the potential for impacts to San Joaquin kit fox, the following measures shall be implemented in conjunction with the construction and decommissioning of each WSP solar and gen-tie project:**

a. Pre-Construction Surveys for Kit Fox. Pre-construction surveys for San Joaquin kit fox shall be conducted by a qualified biologist no less than 14 days and no more than 30 days prior to the beginning of ground disturbance, construction or decommissioning activities, or any other activities likely to impact the San Joaquin kit fox. These surveys shall be conducted in accordance with the USFWS Standard Recommendations. The primary objective is to identify kit fox habitat features (e.g., potential dens and refugia) on the solar project and gen-tie sites and evaluate their use by kit foxes. If an active kit fox den is detected within or immediately adjacent to the area of work, the USFWS shall be contacted immediately to determine the best course of action.

b. Kit Fox Avoidance Measures. Should kit fox be found to be using a project site during preconstruction surveys, the project shall avoid the habitat occupied by kit fox and the Sacramento Field Office of the USFWS and the Fresno Field Office of CDFW shall be notified.

c. Tailgate Training for Worker. All workers on solar and gen-tie projects shall attend a tailgate training session conducted by a qualified biologist. The training is to include a description of the species, a brief summary of their biology, and minimization measures and instructions on what to do if a San Joaquin Kit Fox is observed on a project site.

d. Minimization of Potential Disturbance to Kit Fox. Whether or not kit foxes are found to be present, all permanent and temporary construction activities, decommissioning activities, and other types of project-related activities shall be carried out in a manner that minimizes potential disturbance to kit foxes. This shall be accomplished through implementation of the protection measures set forth in "*U.S. Fish and Wildlife Service Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior To or During Ground Disturbance*" (USFWS 2011) which are set forth in full in Table BIO-3.

Table BIO-3

U.S. FISH AND WILDLIFE SERVICE STANDARDIZED RECOMMENDATIONS FOR PROTECTION OF THE ENDANGERED SAN JOAQUIN KIT FOX PRIOR TO OR DURING GROUND DISTURBANCE

CONSTRUCTION AND ON-GOING OPERATIONAL REQUIREMENTS

1. Project-related vehicles should observe a daytime speed limit of 20-mph throughout the site in all project areas, except on county roads and State and Federal highways; this is particularly important at night when kit foxes are most active. Night-time construction should be minimized to the extent possible. However if it does occur, then the speed limit should be reduced to 10-mph. Off-road traffic outside of designated project areas should be prohibited.
2. To prevent inadvertent entrapment of kit foxes or other animals during the construction phase of a project, all excavated, 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. If the trenches cannot be closed, one or more escape ramps constructed of earthen-fill or wooden planks shall be installed. Before such holes or trenches are filled, they should be thoroughly inspected for trapped animals. If at any time a trapped or injured kit fox is discovered, the Service and the California Department of Fish and Wildlife (CDFW) shall be contacted as noted under measure 13 referenced below.
3. Kit foxes are attracted to den-like structures such as pipes and may enter stored pipes and become trapped or injured. All construction pipes, culverts, or similar structures with a diameter of 4-inches or greater that are stored at a construction site for one or more overnight periods should be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is discovered inside a pipe, that section of pipe should not be moved until the USFWS has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved only once to remove it from the path of construction activity, until the fox has escaped.
4. All food-related trash items such as wrappers, cans, bottles, and food scraps should be disposed of in securely closed containers and removed at least once a week from a construction or project site.
5. No firearms shall be allowed on the project site. (This prohibition does not apply to law enforcement personnel such as Sheriff's Deputies or the Fire Marshal.)
6. No pets, such as dogs or cats, should be permitted on the project site to prevent harassment, mortality of kit foxes, or destruction of dens.
7. Use of rodenticides and herbicides in project areas should be restricted. This is necessary to prevent primary or secondary poisoning of kit foxes and the depletion of prey populations on which they depend. All uses of such compounds should observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other State and Federal legislation, as well as additional project-related restrictions deemed necessary by the USFWS. If rodent control must be conducted, zinc phosphide should be used because of a proven lower risk to kit fox. A representative shall be appointed by the project proponent who will be the contact source for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured or entrapped kit fox. The representative will be identified during the employee education program and their name and telephone number shall be provided to the USFWS.
8. A representative shall be appointed by the project proponent who will be the contact source for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured or entrapped kit fox. The representative will be identified during the employee education program and their name and telephone number shall be provided to the USFWS. (Continued on next page.)

Table BIO-3 (Cont'd)

U.S. FISH AND WILDLIFE SERVICE STANDARDIZED RECOMMENDATIONS FOR PROTECTION OF THE ENDANGERED SAN JOAQUIN KIT FOX PRIOR TO OR DURING GROUND DISTURBANCE

CONSTRUCTION AND ON-GOING OPERATIONAL REQUIREMENTS

9. An employee education program should be conducted for any project that has anticipated impacts to kit fox or other endangered species. The program should consist of a brief presentation by persons knowledgeable in kit fox biology and legislative protection to explain endangered species concerns to contractors, their employees, and military and/or agency personnel involved in the project. The program should include the following: A description of the San Joaquin kit fox and its habitat needs; a report of the occurrence of kit fox in the project area; an explanation of the status of the species and its protection under the Endangered Species Act; and a list of measures being taken to reduce impacts to the species during project construction and implementation. A fact sheet conveying this information should be prepared for distribution to the previously referenced people and anyone else who may enter the project site.
10. Upon completion of the project, all areas subject to temporary ground disturbances, including storage and staging areas, temporary roads, pipeline corridors, etc., should be re-contoured if necessary, and revegetated to promote restoration of the area to pre-project conditions. An area subject to "temporary" disturbance means any area that is disturbed during the project, but after project completion will not be subject to further disturbance and has the potential to be revegetated. Appropriate methods and plant species used to revegetate such areas should be determined on a site-specific basis in consultation with the USFWS, California Department of Fish and Wildlife (CDFW), and revegetation experts.
11. In the case of trapped animals, escape ramps or structures should be installed immediately to allow the animal(s) to escape, or the USFWS should be contacted for guidance.
12. Any contractor, employee, or military or agency personnel who are responsible for inadvertently killing or injuring a San Joaquin kit fox shall immediately report the incident to their representative. This representative shall contact the CDFW immediately in the case of a dead, injured or entrapped kit fox. The CDFW contact for immediate assistance is State Dispatch at (916) 445-0045. They will contact the local warden or Mr. Paul Hoffman, the wildlife biologist, at (530) 934-9309. The USFWS should be contacted at the numbers below.
13. The Sacramento Fish and Wildlife Office and CDFW shall be notified in writing within three working days of the accidental death or injury to a San Joaquin kit fox during project related activities. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal and any other pertinent information. The USFWS contact is the Chief of the Division of Endangered Species, at the addresses and telephone numbers below. The CDFW contact is Mr. Paul Hoffman at 1701 Nimbus Road, Suite A, Rancho Cordova, California 95670, (530) 934-9309.
14. New sightings of kit fox shall be reported to the California Natural Diversity Database (CNDDB). A copy of the reporting form and a topographic map clearly marked with the location of where the kit fox was observed should also be provided to the Service at the address below.
15. Any project-related information required by the Service or questions concerning the above conditions or their implementation may be directed in writing to the U.S. Fish and Wildlife Service at:

    Endangered Species Division
    2800 Cottage Way, Suite W2605
    Sacramento, California 95825-1846
    (916) 414-6620 or (916) 414-6600

Impact BIO-7. Impacts to American Badgers

***Westlands Solar Park*. The WSP solar development could result in the following impacts to American badgers: 1) mortality of individual American badgers, and; 2) reduction of foraging, breeding, and denning habitat for American badgers. (*Less-than-Significant Impacts with Mitigation*)**

WSP Gen-Tie Corridors*. The WSP gen-tie projects could result in the following impacts to American badgers: 1) mortality of individual American badgers, and; 2) reduction of foraging, breeding, and denning habitat for American badgers. (*Less-than-Significant Impacts*) *with Mitigation

This impact analysis, together with related analyses, addresses significance criterion 'a' above.

Westlands Solar Park

No badgers or badger burrows were observed within the WSP plan area during any of LOA's multi-year site surveys. There are no reported sightings of American badgers within or near the plan area, and the nearest reported sighting is 6 miles west. The LOA biological surveys identified potential on-site badger habitat in the form of fallow fields, although no burrows of the size and shape suitable for American badgers were found.

Comprehensive field surveys for American badger have not been conducted in the plan area, and it is possible this species may establish burrows in fallow fields with sparse to moderately dense vegetation within the plan area. Given the multi-year buildout period for the WSP, the potential presence of American badger within the plan area at some time during WSP solar development cannot be ruled out. As such, the WSP solar development could have a potentially *significant impact* upon the American badger. With the implementation of MM BIO-6 below, the potential impact would be reduced to *less than significant*.

WSP Gen-Tie Corridors

The major portions of the gen-tie corridors occur within agricultural fields where badgers are expected to follow linear features such as creeks, drainages, canals, and the California Aqueduct for movement through the highly disturbed agricultural lands. Badgers are expected to exist within and directly adjacent to natural and fallowed lands.

Therefore, construction of the gen-tie projects could result in loss of foraging, breeding and denning habitat, and may result in harm or injury to individuals of this species. The potential for badgers to suffer mortality during project construction would constitute a *significant impact*. With the implementation of MM BIO-6 below, the potential impact would be reduced to *less than significant*.

Mitigation Measures:

Westlands Solar Park. **Implement MM BIO-6 (American badger).**

WSP Gen-Tie Corridors. **Implement MM BIO-6 (American badger).**

MM BIO-6. American Badger Mitigation. The following measures shall be implemented to minimize impacts to the American badger, as necessary prior to the construction and decommissioning of the WSP solar and gen-tie projects:

a. Preconstruction Surveys for American Badger. During the course of pre-construction surveys prescribed for other species, a qualified biologist shall also determine the presence or absence of badgers prior to the start of each individual project. If badgers are found to be absent, a report shall be written to the applicant so stating and no other mitigations for the protection of badgers would be warranted.

b. Avoidance of Active Badger Dens and Monitoring. If an active badger den is identified during pre-construction surveys within or immediately adjacent to an area subject to construction or decommissioning, a construction-free buffer of up to 300 feet (or distance specified by CDFW) shall be established around the den. Once the biologist has determined that badgers have vacated the burrow, the burrow can be collapsed or excavated, and ground disturbance can proceed. Should the burrow be determined to be a natal or reproductive den, and because badgers are known to use multiple burrows in a breeding burrow complex, a biological monitor shall be present onsite during construction activities in the vicinity of the burrows to ensure the buffer is adequate to avoid direct impact to individuals or natal/reproductive den abandonment. The monitor shall be required onsite until it is determined that young are of an independent age and construction or decommissioning activities would not harm individual badgers.

c. Tailgate Training for Workers. All workers on the solar and gen-tie projects shall attend a tailgate training session conducted by a qualified biologist. The training is to include a description of the species, a brief summary of their biology, and minimization measures and instructions on what to do if an American Badger is observed on a project site.

Impact BIO-8. Impacts to Wildlife Movement Corridors

***Westlands Solar Park*. WSP solar development would not interfere with the home range and dispersal movements of native wildlife. (*Less-than-Significant Impact with Mitigation*)**

***WSP Gen-Tie Corridors*. The WSP gen-tie projects would not interfere with the home range and dispersal movements of native wildlife. (*Less-than-Significant Impact*)**

This impact analysis, together with related analyses, addresses significance criterion 'd' above.

Westlands Solar Park

Given the large scale of the WSP plan area, it is likely that some species, such as San Joaquin kit fox may use on-site canals as movement corridors to cross the plan area. The large area comprising the plan area (approximately 33 sq. mi.) likely has value for the regional movements of some wildlife species, when placed in a regional context. However, the WSP solar development would retain the existing canals and ditches, which would continue to be operated and managed as they are under current conditions. Thus, it is expected that wildlife that currently uses the canals for movement will continue to use the canal system to move through the site at project build-out.

All WSP solar facilities will include perimeter fencing and internal fencing around facility subareas. This fencing could create a barrier to wildlife movement through the WSP plan area, which would represent a *significant impact*. With the implementation of MM BIO-7 below, the potential impacts of WSP solar development to wildlife movement would be reduced to *less than significant*.

WSP Gen-Tie Corridors

In the vicinity of the gen-tie corridors, the California Aqueduct is likely used as a movement corridor for local wildlife. However, given the very light footprint of the gen-tie lines, it is unlikely that they would affect local wildlife movement along the Aqueduct or any other linear feature. Wildlife currently using the gen-tie corridors area for movement is expected to continue to use the gen-tie corridors after they are completed. The gen-tie project impacts to movement corridors for local wildlife would *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. Implement MM BIO-7.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

MM BIO-7. Wildlife Movement Mitigation. The following measure shall be implemented to ensure continued wildlife movement through the WSP plan area for the life of the WSP solar facilities:

a. Wildlife Friendly Fencing. To allow for ground movement of wildlife through the plan area, all fencing around and within the WSP solar facilities shall to consist of "wildlife friendly" fencing with a continuous 5-inch separation from the top of the ground to the lowest point of the bottom of the fence along all fencing. Such fencing shall not be electrified.

[Note: The CEQA Guidelines Appendix G checklist question 4.d. also states "…impede the use of native wildlife nursery sites." This is a broad question that encompasses the breeding habitat of all wildlife species including terrestrial, aquatic, and avian species. The impacts to breeding habitat for various wildlife species are addressed under Impact BIO-2 (special-status wildlife species), BIO-3 (raptors and migratory birds), BIO-4 (Swainson's hawk), BIO-5 (burrowing owls), BIO-6 (San Joaquin kit fox), BIO-7 (American badger), and BIO-9 (jurisdictional waters and riparian habitats.]

_____

Impact BIO-9. Impacts to Jurisdictional Waters and Riparian Habitats

***Westlands Solar Park*. Although WSP solar development is intended to avoid the permanent canals, tailwater pond, and associated riparian zones and wetlands within the plan area, the WSP solar projects could potentially result in disturbance to Waters of the U.S., waters of California, and/or associated riparian habitat. (*Less-than-Significant Impact with Mitigation*)**

***WSP Gen-Tie Corridors*. Although the WSP gen-tie corridors are intended to avoid permanent canals, ditches, and the California Aqueduct, and associated riparian zones and wetlands, the gen-tie projects could potentially result in disturbance to Waters of the U.S., waters of California, and/or associated riparian habitat. (*Less-than-Significant Impact with Mitigation*)**

This impact analysis addresses significance criteria 'b' and 'c' above.

Westlands Solar Park

As discussed under *3.4.1. Environmental Setting* above, the water features present within the plan area, consisting of irrigation canals and the adjacent tailwater pond, do not appear to meet definition of "Waters of the United States" under the Clean Water Act, and therefore would not be subject to the permit jurisdiction of the U.S. Army Corps of Engineers (USACE). However, in the absence of a wetland delineation verified by the USACE, the jurisdictional status of onsite waters is unconfirmed. In addition, these features may be subject to the jurisdiction of the State of California under the Porter-Cologne Water Quality Act, the Clean Water Act, and/or the Fish and Game Code.

WSP solar development is not intended to encroach upon or physically alter the permanent canals or tailwater pond, or their associated riparian zones. However, should the detailed plan for individual WSP solar projects involve the placement of any fill or it is possible that new bridges may need to be constructed over canals or ditches to provide access to solar project sites or portions of sites. Should the detailed plans for individual WSP solar projects involve the placement of any such fill or structures in any of the permanent water features, this could constitute a *significant impact*. With the implementation of MM BIO-8 below, the potential impact would be reduced to *less than significant*.

WSP Gen-Tie Corridors

The WSP gen-tie corridors will at least cross over the California Aqueduct and possibly other canals, ditches or drainage features. While it is unlikely that any aquatic features within the gen-tie corridors is

a water of the United States, it is possible that any such features could be considered waters of the state of California and within the jurisdictions of the CDFW and RWQCB.

Should a given transmission tower be located within the bed and bank of one or more drainages, the project would result in permanent impact to the channel. Project impacts to the channels of these drainages could substantially alter flows within them with concomitant erosional effects on the channel banks at the tower location(s) and on downstream reaches of each affected drainage course. These erosional effects could in turn affect terrestrial vertebrate species using drainage channels as habitat.

Therefore, the construction of the gen-tie projects could potentially result in *significant impact* to federally protected wetlands, and other jurisdictional waters. With the implementation of MM BIO-8 below, the potential impact would be reduced to *less than significant*.

Mitigation Measures:

Westlands Solar Park. **Implement MM BIO-8 (wetlands and riparian).**

WSP Gen-Tie Corridors. **Implement MM BIO-8 (wetlands and riparian).**

MM BIO-8. Avoid Wetlands, Jurisdictional Waters, and Riparian Communities. In order to avoid the potential for impacts to wetlands, jurisdictional waters, and riparian communities, the following measures shall be implemented in conjunction with the construction and decommissioning of each solar and gen-tie project:

a. Survey All Defined Drainage Channels Subject to Encroachment. Prior to the preparation of final project plans that establish the locations of solar facilities and gen-tie facilities, any channels that would likely be considered waters of the United States and waters of the state of California and are subject to potential encroachment shall be field-surveyed. The surveys shall be conducted by a wetland biologist capable of identifying ordinary high water (the limit of USACE and RWQCB jurisdiction) and top of bank (the limit of CDFW jurisdiction). All defined channels observed within the area of potential encroachment during this survey shall be mapped in detail and be suitable for purposes of planning the final locations of solar and gen-tie facilities.

b. Avoidance of Drainage Channels. Using the detailed mapping of drainage channels, each solar and gen-tie project shall be planned such that the placement of fill and structures shall avoid disturbance to the bed and bank of all defined canal or drainage channels to the extent feasible. Avoidance of defined channels may require the use of clear-span bridges for solar projects, or adjusting tower locations within the gen-tie corridors. .

c. Mitigate Unavoidable Impacts to Wetlands. In the event that a canal or drainage channel cannot be feasibly avoided by project construction, i.e., where a solar project site would be inaccessible without constructing a new bridge over a canal or ditch, a wetland delineation shall be required to determine the extent of USACE and/or State jurisdiction over such features. If waters to be filled are determined

to be Waters of the U.S. or the State, the following permits may be required: 1) a Clean Water Act permit from the USACE, 2) a Water Quality Certification from the RWQCB, and/or 3) a Lake or Streambed Alteration Agreement from the CDFW. These permits are usually issued on the condition that a mitigation plan be prepared and approved by the applicable state and federal regulatory agencies noted above.

Impact BIO-10. Local Policies or Ordinances Protecting Biological Resources

***Westlands Solar Park*. The WSP solar development would not conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. (*Less-than-Significant Impact*)**

***WSP Gen-Tie Corridors*. The WSP gen-tie projects would not conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. (*Less-than-Significant Impact*)**

This impact analysis addresses significance criterion 'e' above.

Westlands Solar Park

Since the WSP plan area is entirely within Kings County, the WSP solar development would be subject only to the policies and regulations of Kings County. The Kings County General Plan includes a number of policies related to the protection of biological species and habitats, as enumerated in Section *3.4.2. Regulatory Context*. These policies provide for the protection of sensitive species and habitats by requiring biological surveys for discretionary projects, implementing mitigation for potential biological impacts in compliance with CEQA, and coordination with the resource agency in determining appropriate protection measures. Resource Conservation (RC) Policy E1.1.2 specifically provides for the protection of healthy native oaks and other healthy native trees during the course of development review.

The general biological resource impacts associated with WSP solar development are identified previously in this section. The mitigation measures specified for potential impacts provided detailed prescriptive actions to be undertaken at the project-specific review stage to avoid or mitigate potentially significant impacts to biological resources. At the project stage, intensive ground surveys will be conducted on each WSP solar project site to make specific findings of potential impact at those project sites and to identify specific mitigation measures to be implemented in conjunction with those projects. It is expected that these subsequent analyses will identify feasible mitigations for potential biological impacts, and that coordination with the appropriate resource agencies will take place to identify mitigation measures appropriate to that project, as needed. Any healthy native trees within the solar project sites would be identified in the course of biological site surveys, with appropriate protection measures identified, as needed. Therefore, it is expected that WSP solar development will take place in a manner that would not conflict with local policies or ordinances protecting biological resources. As

such, the impact of WSP solar development with respect to conflicts with local policies and ordinances protecting biological resources would be *less than significant*.

WSP Gen-Tie Corridors

As discussed in Section *3.4.2. Regulatory Context*, local jurisdictions have limited authority over the construction of transmission lines and related facilities such as electrical substations and switching stations. These facilities are typically under the sole jurisdiction of the California Public Utilities Commission, although the CPUC is required to coordinate with local jurisdictions regarding consistency with plans and policies. This would include coordination with the counties of Kings, Fresno, and Merced.

Since the CPUC also requires environmental review of transmission projects, it is expected that potential biological impacts would be identified and appropriate mitigations be required to be implemented in conjunction with the transmission projects. The information in this EIR would be used by the CPUC in its project-specific environmental reviews, so it is expected that the prescriptive measures identified in this section would be carried forward and be provided with further specificity, as informed by ground surveys and required coordination with the resource agencies, for implementation at the project level. Since the policies of the respective counties with respect to biological resources are consistent with the requirements of CEQA and other state laws and regulations related to biological resources, with which the gen-tie projects would be required to be consistent, it is expected that the gen-tie projects would therefore not conflict with local policies and ordinances protecting biological resources.

For the instances where transmission segments, such as gen-ties, may be privately owned and not subject to CPUC jurisdiction, these transmission segments would be subject to local county discretionary approval. As with the transmission projects under CPUC jurisdiction, discussed above, it is expected that project-specific biological surveys would be conducted, with impacts identified and mitigation measures required, as appropriate, such that these gen-tie projects would not conflict with county policies or ordinance protecting biological resources,

In summary, the impact due to potential conflicts of the WSP Gen-tie projects with local policies and ordinances protecting biological resources would be *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

Impact BIO-11. Habitat Conservation Plans

***Westlands Solar Park*. The WSP solar development would not conflict with adopted habitat conservation plan areas or other approved local, regional or state habitat conservation plans. (*Less-than-Significant Impact*)**

***WSP Gen-Tie Corridors*.** **The WSP gen-tie projects would not conflict with adopted habitat conservation plans or other approved local, regional or state habitat conservation plans. (*Less-than-Significant Impact*)**

This impact analysis addresses significance criterion 'f' above.

Westlands Solar Park

The USFWS has adopted the *Recovery Plan for Upland Species of the San Joaquin Valley* which covers 34 species of plants and animals that occur in the San Joaquin Valley. The majority of these species occur in arid grasslands and scrublands of the San Joaquin Valley and the adjacent foothills and valleys. The plan area includes information on recovery criteria, habitat protection, umbrella and keystone species, monitoring and research program, adaptive management, and economic and social considerations. The only species addressed in the recovery plan that potentially occurs in the WSP vicinity is the San Joaquin kit fox, although no sightings of this species have been recorded in the immediate vicinity of the WSP plan area, as discussed above. The Recovery Plan does not identify the WSP plan area or any other lands in the vicinity as areas that should be protected as Specialty Reserve Areas, Wildlife-Compatible Farmland to be Maintained, or Areas Where Connectivity and Linkages Should be Promoted (USFWS 1998).

The PG&E San Joaquin Valley Operation and Maintenance HCP is the only HCP that covers the area of the Westlands Solar Park. While some elements of the WSP solar projects (e.g., substations) may be constructed and/or operated by PG&E, the HCP would not cover construction (but only operation and maintenance) of these major facilities; therefore, this HCP does not apply to the Westlands Solar Park.

The WSP plan area is not covered by any existing Habitat Conservation Plan (HCP) or Natural Community Conservation Plan (NCCP), or any other conservation plan area adopted at the local, regional, state, or federal level. Therefore, WSP solar development would not conflict with any such plans.

WSP Gen-Tie Corridors

The only species addressed in the *Recovery Plan for Upland Species of the San Joaquin Valley* that potentially occurs in the WSP and gen-tie corridors vicinity is the San Joaquin kit fox. Although no sightings of this species have been recorded in the immediate vicinity of the WSP plan area, there are several sightings from 1981 near the California Aqueduct in the vicinity of the gen-tie corridors. The Recovery Plan does not identify any lands in the immediate vicinity of the WSP plan area or gen-tie corridors as areas that should be protected as Specialty Reserve Areas, Wildlife-Compatible Farmland to be Maintained, or Areas Where Connectivity and Linkages Should be Promoted. The nearest area identified as a connectivity and linkage area is the Kettleman Hills to Anticline Ridge Movement Corridor, located west of I-5, approximately 4 miles west of the western end of the gen-tie corridors at the Gates Substation (USFWS 1998). The gen-tie projects would not hinder the functionality of this movement corridor.

The PG&E San Joaquin Valley Operation and Maintenance HCP is the only HCP that covers the area of the gen-tie corridors. While some elements of the gen-tie projects (e.g., transmission lines, substations)

may be constructed and/or operated by PG&E, the HCP would not cover construction of these major facilities; therefore, this HCP does not apply to the WSP gen-tie corridors.

The WSP gen-tie corridors area is not covered by any existing Habitat Conservation Plan (HCP) or Natural Community Conservation Plan (NCCP), or any other conservation plan adopted at the local, regional, state, or federal level. Therefore, the gen-tie projects would not conflict with any such plans.

Mitigation Measures:

Westlands Solar Park. **No mitigation is required.**

WSP Gen-Tie Corridors. **No mitigation is required.**

Cumulative Impacts

Impact BIO-12. Cumulative Impacts to Biological Resources

Westlands Solar Park**. Upon mitigation for biological impacts associated with WSP solar development and other cumulative projects in the vicinity, the cumulative biological impacts would be less than significant, and the contribution from WSP solar development would be not cumulatively considerable. (*Less-than-Significant Cumulative Impact with Mitigation*)**

WSP Gen-Tie Corridors**. Upon mitigation for biological impacts associated with WSP gen-tie projects and other cumulative projects in the vicinity, the cumulative biological impacts would be less than significant, and the contribution from the gen-tie projects would be not cumulatively considerable. (*Less-than-Significant Cumulative Impact with Mitigation*)**

Geographic Scope of Cumulative Impact Analysis

The study area for cumulative biological impacts is variable depending on the species or resource under consideration. For example, the study area for cumulative impacts to Swainson's hawk is generally considered to encompass lands within a 10-mile radius of a project site, while the study areas for other species are usually smaller. Therefore, the geographic scope of this cumulative analysis varies depending on the species or resource under consideration, with the maximum extent being 10 miles from the WSP plan area.

Westlands Solar Park

Near Term

Under near-term conditions, there are 21 pending, approved, or completed projects on lands within 10 miles of the WSP plan area. (Note: The Westside Solar project and Westlands Aquamarine solar project, shown in Figure PD-9, are located within the WSP plan area. However, since the impacts associated with

these projects are addressed in the WSP impact analysis, they are not included again in the list of cumulative projects below.) All of these projects comprise solar PV developments. These solar projects are listed below and described in Section *2.5. Completed, Approved and Pending Projects/ Introduction to Cumulative Impact Analysis*.

- Mustang
- Orion
- Kent South
- American Kings
- Mustang 2
- Kettleman
- Kansas
- Kansas South
- Lemoore 14
- Henrietta (Riverwest)
- NAS Lemoore
- Java
- Aurora
- 2275 Hattesen
- Avenal Park
- Sun City
- Sand Drag
- Westlands Solar Farm
- PG&E Gates
- PG&E Huron
- SC&R

The WSP plan area includes habitat for Swainson's hawks, burrowing owls, and other raptors and migratory bird species. The plan area may also provide habitat for San Joaquin kit fox and American badger. Prior to construction of each WSP solar project, full coverage ground surveys will be undertaken to determine the presence or absence of these species at the given project site, as specified above in MMs BIO-1 through BIO-8. If individuals of these species are found to be present, then the avoidance measures specified in the above Mitigation Measures for each species would be implemented to prevent direct impacts to the species. With respect to habitat impacts, the WSP solar development would not have a significant impact upon foraging habitat of Swainson's hawks, other raptors or migratory bird species, San Joaquin kit fox, or American badger, given the abundance of available foraging habitat in the area. Individual solar projects within the WSP plan area may result in impacts to burrowing owl foraging habitat, if active burrowing owl burrows are identified at specific solar project sites prior to development. Depending on the availability of other foraging habitat nearby, compensatory mitigation may be required in the form of restrictive covenants or similar habitat protection measures on adjacent or nearby lands in order to mitigate the impact to burrowing owl habitat, as specified in MM BIO-4. The potential impacts of WSP solar development upon wildlife movement through the plan area would be mitigated through implementation of MM BIO-7. WSP solar projects could result in potential impacts to jurisdictional wetlands or riparian habitat, but any such impacts would be mitigated through implementation of MM BIO-8. In summary, all potential impacts to special status animal species and habitats as a result of WSP solar development would be avoided or reduced to less-than-significant levels through required mitigations. The WSP solar development would not have a significant impact on special status plant species, or habitat conservation plans. The potential cumulative impacts associated with near-term WSP solar development are discussed below.

With respect to impacts to individuals of special status animal species, it is anticipated that any impacts to individual animals would be avoided at the cumulative project sites through the same avoidance measures to be implemented in conjunction with WSP solar development, as specified in MMs BIO-1 through 6. Since these impacts would be avoided for each project, the near-term cumulative impacts to individuals of special status animal species would be *less than significant* and the impact of WSP solar development would be *not cumulatively considerable with mitigation*.

Regarding impacts to Swainson's hawk foraging habitat, these impacts are considered in the context of the 10-mile foraging radius for a typical Swainson's hawk pair. The full development of the WSP plan area, combined with the development of the cumulative projects listed above, would result in a reduction of about 31,500 acres in available foraging habitat for Swainson's hawks. However, as discussed under Impact BIO-4 above, approximately 156,000 acres of foraging habitat would still remain after this cumulative development to support the existing Swainson's hawks within a 10-mile radius, and would also provide abundant surplus habitat to support additional pairs of Swainson's hawks. Therefore, the near-term cumulative impact to Swainson's hawk foraging habitat would be *less than significant* and the impact of WSP solar development would be *not cumulatively considerable*.

With respect to foraging habitat for burrowing owls, it is possible that one or more of the cumulative projects in the region may include burrowing owl burrows within their sites. If so, it is expected that determinations would be made in each case as to whether sufficient foraging habitat would remain in the vicinity after project development. If it is determined that insufficient foraging habitat would be available, it is expected that such a project would be required to provide replacement habitat nearby in the form of a restrictive covenant or similar measure, as specified in MM BIO-4, to reduce the impact to a less than significant level. In anticipation that this would occur wherever necessary, the near-term cumulative impact to burrowing owl habitat would be *less than significant*. The residual impact attributable to WSP solar development in the near-term would be *not cumulatively considerable with mitigation*.

WSP solar development could have potential impacts to wetlands, jurisdictional waters, streams or riparian areas, but any such impacts would be mitigated through avoidance or mitigation measures specified in MM BIO-8. It is expected that any other cumulative projects that would have potential impacts to wetland or riparian habitats would be subject to similar mitigation measures. Therefore, the near-term cumulative impact to wetland and riparian habitat would be *less than significant* and the impact of WSP solar development would be *not cumulatively considerable with mitigation*.

Neither the WSP solar projects nor any other cumulative projects would interfere with wildlife movement corridors or migration patterns. All of the cumulative projects would include wildlife friendly fencing, as specified in MM BIO-7, to allow through movement of San Joaquin kit foxes or other species that may be dispersing through the area. Therefore, the near-term cumulative impact to wildlife movement corridors would be *less than significant*, and the contribution of the WSP solar development would be *not cumulatively considerable with mitigation*.

None of the cumulative projects, including WSP solar projects, would conflict with local plans and policies protecting biological resources, or conflict with an applicable habitat conservation plan or a natural community conservation plan. As such, there would be no cumulative impact in this regard, and the project would make *no contribution* to any such cumulative impact in the near term.

In summary, the near-term cumulative impact to biological resources would be *less than significant*, and the project *contribution would not be considerable with implementation of the mitigation measures identified above*.

Far Term

To evaluate far-term conditions, the cumulative analysis of biological impacts considers the full buildout of land uses in the vicinity of the WSP plan area as shown on the 2035 Kings County General Plan and the Fresno County General Plan (which covers lands immediately to the west of WSP). The 'Kings County Land

Use Map' of the Land Use Element shows that Kings County lands near the WSP plan area are designated as either 'General Agriculture 40 ac.' or 'Exclusive Agriculture 40 ac.' Similarly, the Fresno County General Plan shows the lands near the WSP plan area are designated 'Agriculture.' Thus it is reasonable to assume that agricultural production will remain the dominant land use in surrounding lands for the life of the General Plans.

It is important to note that, as with the lands of the WSP plan area, the agricultural designations of the 2035 Kings County General Plan allow the installation of utility-scale PV solar generating facilities (KC 2010). Thus it is possible that additional solar development projects could be proposed in the WSP vicinity within the remaining 20-year planning horizon of the General Plan. Since the adjacent lands to the west of the WSP plan area are located within Fresno County, the corresponding General Plan designations for Fresno County lands would guide permitted uses on adjacent lands to the west. While the Fresno County General Plan does not specifically allow PV solar development on agriculturally-designated lands, the County has initiated a process for considering solar PV development on agriculturally-designated lands, and has approved a number of solar PV projects under this process (FC 2011). Few solar projects have been proposed or approved by Fresno County in the nearby areas to date (only the Westlands Solar Farm and SC&R solar are located within 10 miles of the WSP boundary; as are 2 PG&E solar facilities but they were not subject to County approval). Since Fresno County has approved a number of solar projects on other agricultural lands in the western portion of the County, it is reasonable to assume that the County would consider proposals for PV solar development on agricultural lands near the WSP plan area. Thus it is anticipated that any development on nearby lands would consist predominantly, if not exclusively, of solar PV projects.

Since the lands in the WSP vicinity are very similar in character to the WSP lands, and are also removed from multiple species habitats in the foothills to the west, it is expected that the same general biological resource conditions prevail on these lands as on the WSP plan area. Thus it is anticipated that very few special status species, apart from burrowing owls, occur on these lands. San Joaquin kit foxes and American badgers may potentially occur on these lands, and these lands provide foraging habitat for Swainson's hawks and other raptors and migratory birds.

With respect to impacts to individuals of special status animal species, it is anticipated that any impacts to individual animals would be avoided at future cumulative project sites through the same avoidance and protection measures to be implemented in conjunction with WSP solar development, as specified in *MMs BIO-1 through 6*. As such, the far-term cumulative impacts to individuals of special status animal species would be *less than significant* and the contribution of the WSP solar development would be *not cumulatively considerable with mitigation*.

Regarding Swainson's hawk foraging habitat, it estimated that there will be a surplus of approximately 156,000 acres of foraging habitat within a 10-mile radius of the WSP Plan area after completion of the near-term cumulative development discussed above. This represents five times the acreage of foraging habitat that will be removed by the near-term cumulative solar projects. It is not anticipated that this amount of foraging habitat would be converted to solar or other development projects under far-term conditions. As such, the far-term cumulative impacts to Swainson's hawk foraging habitat would be *less than significant*, and the WSP contribution would be *not cumulatively considerable*.

With respect to foraging habitat for burrowing owls, it is possible that far term cumulative development projects in the region may include burrowing owl burrows within their sites. If so, it is expected that determinations would be made in each case as to whether sufficient foraging habitat would remain in the

vicinity after project development. If it is determined that insufficient foraging habitat would be available, it is expected that such projects would be required to provide replacement habitat nearby in the form of a restrictive covenants or similar measure, as specified in MM BIO-4, to reduce the impact to a less than significant level. As such, the far-term cumulative impact to burrowing owl habitat would be *less than significant*. Since any WSP solar projects with potentially significant impacts to burrowing owl habitat would be subject to similar compensatory mitigation, the impact attributable to WSP solar development under far-term conditions would be *not cumulatively considerable with mitigation*.

WSP solar development could result in potential impacts to wetlands, jurisdictional waters, streams or riparian areas, but any such impacts would be mitigated through avoidance or mitigation measures specified in MM BIO-8. It is expected that any other cumulative projects that would have potential impacts to wetland or riparian habitats would be subject to similar mitigation measures. Therefore, the far-term cumulative impact to wetland and riparian habitat would be *less than significant* and the impact of WSP solar development would be *not cumulatively considerable with mitigation*.

As is the case with the WSP solar projects, it is possible that far-term cumulative development in the vicinity would interfere with wildlife movement corridors or migration patterns. Cumulative solar projects would be expected to include wildlife friendly fencing, similar to the fencing prescribed in MM BIO-7, to allow through movement of San Joaquin kit foxes or other species that may be dispersing through the area. Therefore, the far-term cumulative impact to wildlife movement corridors would be *less than significant*, and the contribution of the WSP solar development would be *not cumulatively considerable with mitigation*.

Under current plans and policies, none of the cumulative projects, including WSP solar projects, would conflict with local plans and policies protecting biological resources, or conflict with an applicable habitat conservation plan or a natural community conservation plan. While it is possible that new plans, policies, or HCPs may be adopted in the future, any attempt to predict the nature and applicability of such plans, policies, or HCPs would be speculative. As such, there would be no foreseeable cumulative impact in this regard, and the project would make *no contribution* to any such cumulative impact in the far term.

In summary, the cumulative impact to biological resources under far-term cumulative conditions would be *less than significant*, and the WSP *contribution would be not considerable with implementation of mitigation measures identified above*.

WSP Gen-Tie Corridors

Since the physical footprint of the gen-tie projects would be very small, during both construction and operation, the area subject to potential biological impacts from the gen-tie projects is limited. Therefore, the geographic scope of this cumulative analysis extends to lands adjacent to the gen-tie corridors, and includes the cumulative projects on those adjacent lands.

Under near-term conditions, there are two pending transmission projects, and one pending solar project on lands adjacent to the WSP gen-tie corridors. These projects are listed below and shown in Figures PD-10, and described in Section *2.5. Completed, Approved, and Pending Projects/Introduction to Cumulative Impact Analysis*.

- Central Valley Power Connect transmission project (Gates to Gregg Substation)
- Westside Transmission Project (Gates to Dos Amigos/Los Banos Substation)
- SC&R Solar

Near Term

As discussed previously in this section, the WSP gen-tie projects could result in potential impacts to special-status plant and animal species, and their habitats. Potentially affected special-status animal species include mammals (e.g., Joaquin kit fox), and raptors and migratory birds. The gen-tie projects could potentially result in the loss of wetlands and riparian habitat. However, all of these potential impacts would be avoided or reduced to less than significant levels through mitigation measures to be implemented in conjunction with the gen-tie projects. These measures include pre-project surveys to identify sensitive habitats and the avoidance of these habitats through flexible design and siting of towers and other facilities. Impacts to foraging habitats would be minimized due to the inherently small footprints of the gen-tie projects, and the very small amount of permanently disturbed acreage involved in these projects. Pre-construction surveys would be required to identify individuals of special-status species that may be subject to disturbance, and appropriate mitigations would be implemented to avoid or minimize impacts. Therefore, all potential impacts to biological resources associated with the WSP gen-tie projects would be avoided or reduced to less-than-significant levels with mitigation.

The adjacent and nearby cumulative projects that consist of two transmission projects and one solar project. These projects would have relatively light footprints, and potential impacts to biological resources at those project sites would be readily avoidable or mitigable as they are for the WSP solar projects and gen-tie projects. Thus the cumulative impacts to special-status species and their habitats would be *less than significant*, and the contribution of the WSP gen-tie projects to any such cumulative impacts would be *not cumulatively considerable*.

The WSP gen-tie projects could result in potential impacts to wetlands, jurisdictional waters, streams or riparian areas, but any such impacts would be mitigated through avoidance or mitigation measures specified in MM BIO-8. It is expected that any other far-term cumulative projects that would have potential impacts to wetland or riparian habitats would be subject to similar mitigation measures. Therefore, the far-term cumulative impact to wetland and riparian habitat would be *less than significant* and the impact of the WSP gen-tie projects would be *not cumulatively considerable* with mitigation.

Regarding wildlife movement corridors, the WSP gen-tie projects would not adversely affect wildlife movement due their small footprint and profile; and the cumulative solar projects would be expected to include wildlife friendly fencing to allow unimpeded wildlife movements through those facilities, similar to the fencing specified in MM BIO-7. Therefore, the impacts to wildlife movement corridors associated with the Westlands gen-tie projects would be *less than cumulatively significant* and the contribution of the WSP gen-tie projects to any such cumulative impacts would be *not cumulatively considerable*.

None of the cumulative projects, including WSP gen-tie projects, would conflict with local plans and policies protecting biological resources, or conflict with an applicable habitat conservation plan or a natural community conservation plan. As such, there would be no cumulative impact in this regard, and the project would make *no contribution* to any such cumulative impact in the near term.

In summary, the cumulative impact to biological resources under near-term cumulative conditions would be *less than significant*, and the WSP gen-tie projects' *contribution would be not considerable with implementation of mitigation measures identified above*.

Far Term

Under far-term conditions, it is assumed that all cumulative projects, including the WSP gen-tie projects, and also the solar projects considered in the near-term analysis will be completed. The far-term cumulative analysis of biological impacts assumes the full buildout of land uses adjacent to the WSP gen-tie corridors as shown on the General Plans of Kings and Fresno counties. All adjacent lands are designated for agricultural uses in the county general plans. While both counties allow solar PV projects on agriculturally-designated lands, it is not foreseeable which lands, if any, adjacent to the gen-tie corridors will be proposed for solar PV development in the far term. Also, additional transmission facilities or other public utility uses could be planned for adjacent lands, but this eventuality is also unforeseeable at this time. However, this far-term analysis assumes that some solar PV development and additional transmission projects would be constructed in the project vicinity in the far term. However, it is not anticipated that other non-agricultural development would occur in the vicinity of the WSP gen-tie corridors under far-term conditions.

Given the light footprints and low profiles of the cumulative development anticipated in the far term, i.e., transmission and solar projects, any impacts to biological resources would be readily avoidable or mitigable, as discussed above for near-term conditions. As such, the cumulative impacts to biological resources would be *less than significant*, and the contribution of the WSP gen-tie projects would be *not cumulatively considerable with implementation of mitigation measures identified above*.

Mitigation Measures:

Westlands Solar Park. **Implement MMs BIO-1 through BIO-8. No additional mitigation is required.**

WSP Gen-Tie Corridors. **Implement MMs BIO-1 through BIO-8. No additional mitigation is required.**

REFERENCES/BIBLIOGRAPHY – BIOLOGICAL RESOURCES

Fresno County 2000b — Fresno County. 2000. *Fresno County General Plan – Policy Document*. October. http://www2.co.fresno.ca.us/4510/4360/General_Plan area/GP_Final_policy_doc/Table_of_Contents_rj_blue.pdf

Fresno County 2015 — County of Fresno. 2013. *Fresno County Code of Ordinances*. As amended through November 17, 2015. https://law.resource.org/pub/us/code/city/ca/Fresno%20County,%20CA%20Reformat%20with%20tab%20placeholders%20thru%20supp%20%237.pdf

Kings County 1964 — Kings County. 1964. *Zoning Plan – County of Kings California*. Adopted April 7, 1964. http://www.kingscountygis.com/maps/

Kings County 2010a — Kings County. 2010. 2035 *Kings County General Plan*. Adopted January 26, 2010. http://www.countyofkings.com/home/showdocument?id=3106

Kings County 2016 — Kings County. 2016. *Kings County Development Code*. Kings County Code of Ordinances, Appendix A - Ordinance No. 668.12. Dated January 26, 2016; Effective February 26, 2016. http://www.countyofkings.com/home/showdocument?id=12535

LOA 2017 — Live Oak Associates (LOA). 2017. *Westlands Solar Park Master Plan and WSP Gen-Tie Corridors Plan – Biological Assessment – Kings County, California*. September. [Contained in Appendix D of this EIR.]

USFWS 1998 — U.S. Fish & Wildlife Service (USFWS). 1998. *Recovery Plan area for the Upland Species of the San Joaquin Valley, California*. September http://esrp.csustan.edu/publications/pubhtml.php?doc=sjvrp&file=cover.html

USFWS 2011 — U.S. Fish & Wildlife Service (USFWS). 2011. *U.S. Fish and Wildlife Service Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior To or During Ground Disturbance*. Prepared by Sacramento Fish and Wildlife Office, January. http://www.fws.gov/sacramento/es/Survey-Protocols-Guidelines/Documents/kitfox_standard_rec_2011.pdf

This page intentionally left blank

3.5. CULTURAL RESOURCES AND TRIBAL CULTURAL RESOURCES

This discussion is based on the following cultural resources report: Cultural Resources Review, Programmatic Environmental Review, Westlands Solar Park Master Plan and WSP Gen-Tie Corridors Plan, prepared by Basin Research Associates in August 2017 The cultural resources assessment report are incorporated into this EIR by reference, as provided under CEQA Guidelines Section 15150. The cultural resources assessment report is available for review at Westlands Water District headquarters in Fresno, where it is kept administratively confidential pursuant to California Public Records Act Section 6254.10.

3.5.1. ENVIRONMENTAL SETTING

Westlands Solar Park and WSP Gen-Tie Corridors

The research conducted for the Westlands Solar Park cultural resources report by Basin Research Associates included a prehistoric and historic site records search through the California Historical Resources Information System, Southern San Joaquin Valley Information Center, California State University (CSU) Bakersfield. In addition, a review of pertinent literature and archival records on file at Basin Research Associates were consulted. Specialized listings consulted include the *Historic Properties Directory for Kings County* along with the most recent updates of the *National Register of Historic Places*, *California Historical Landmarks*, *California Register of Historical Resources California Points of Historical Interest*, and *California Register* as well as other evaluations of properties reviewed by the State of California Office of Historic Preservation. Other sources consulted include: the *California History Plan*; *California Inventory of Historic Resources*; and *Five Views: an Ethnic Sites Survey for California, as well as* available local and regional surveys/inventories, historic maps, etc.

Native American Resources

Ethnography

Prehistoric occupation and use of the general area from perhaps as early as 12,000 years ago. The wetland environment of Tulare Lake would have provided a favorable environment for prehistoric Native Americans due to the availability of resources such as fresh water, fish and large game. During the summers, this area had a lake-slough-marsh environment which provided an enormous supply of animal and plant foods and a variety of plentiful wildlife. The rivers, sloughs and lakes were also used for transportation by canoe-shaped rafts made of tule reeds. In the later period beginning about 1,500 years ago, subsistence began to focus on processing of acorns and other plant foods, with a decreased emphasis on hunting and fishing.

The WSP plan area is located within the ethnographic area ascribed to the Southern Valley Yokuts who occupied the areas surrounding Tulare, Buena Vista and Kern lakes and their connecting sloughs, and

the lower portions of the Kings, Kaweah, Tule and Kern rivers. The groups spoke a Southern Valley-type dialect of the Yokuts language of the Penutian family of languages. They were hunters and gatherers who depended on almost year-round fishing, hunting waterfowl and collecting shellfish, roots and seeds. Villages were selected for proximity to water and many were on small open flats at the water's edge. Within a geographic area, villages functioned as the center of each tribe.

The Southern Valley Yokuts tribe known as the *Tachi (Tache),* the northernmost of the three Tulare Lake tribes, occupied the WSP area. *Tachi* appear to have been one of the largest of all Yokuts divisions, and their large territory included the north and west shore of Tulare Lake as well as the Kettleman Hills and Plains to the upper foothills west of Kettleman Plains. They moved to take advantage of seasonal variations in the resources available in the Tulare Lake Basin.

The *Tachi* village of *Waiu*, one of eight in Tachi territory, was located south of Lemoore along the west side of Mussel Slough on which stands their present rancheria of Santa Rosa. The location of the Santa Rosa Indian Community of the Santa Rosa Rancheria, California (a.k.a. Santa Rosa Rancheria Tachi Tribe) conforms to the former site of the *Tachi* village of *Wai.* The community, a federally-recognized Indian tribe, is located approximately 5 miles east/northeast of the project on the east side the Kings River southeast of Lemoore and northeast of Stratford, off State Highway 41 between Jersey and Kent Avenues, west of 17th Avenue. The "Santa Rosa Rancheria" is a designated State of California Ethnic site.

Prehistoric and Historic Archaeology

The literature search described earlier in this section revealed that one prehistoric isolate (i.e., isolated artifact) had been previously recorded just within the northeast WSP boundary, as described below:

> P-16-000198 consists of an isolated basalt groundstone fragment that was recovered south of the Avenal Cutoff Road along the east side of 25th Avenue in the SE 1/4 of the SE 1/4 [corner] of Section 4 T20S R19E during monitoring of trenching for a natural gas pipeline. Because an isolated artifact does not constitute an archaeological site, the find was not eligible for listing on the California Register of Historical Resources.

Additional prehistoric resources have been recorded within one-mile of the exterior WSP boundaries. All of these resources are located east of Highway 41, along the western margins of the former Tulare Lake. These resources include five prehistoric sites (four of which included Native American remains), two combined prehistoric/historic-era sites, and 21 prehistoric isolates. None of these sites is listed on the State Office of Historic Preservation's *Archaeological Determinations of Eligibility* for Kings County.

No other prehistoric or combined prehistoric/historic-era sites or isolates have been recorded in or adjacent to the WSP plan area or WSP gen-tie corridors. No National Register of Historic Places or California Register of Historical Resources eligible or listed historic properties/cultural resources, and no known ethnographic, traditional or contemporary Native American use areas and/or other features of cultural significance have been identified in or adjacent to the WSP or WSP Gen-Tie Corridors

The Native American Heritage Commission (NAHC) has indicated that a search of the sacred land file was negative for the presence of Native American resources in the immediate project area. Likewise, no

prehistoric materials were observed during the intensive field inventory of the project site conducted by Basin Research.

Conclusions on Prehistoric and Historic Archaeology for Westlands Solar Park and WSP Gen-Tie Corridors

Review of the archaeological and geo-archaeological data suggest a low to low-moderate potential for exposing subsurface archaeological materials within the WSP plan area and gen-tie corridors. This conclusion by Basin Research Associates is based on the general absence of recorded prehistoric and historic archaeological sites within and/or immediately adjacent to the WSP plan area; the lack of any unexpected archaeological discoveries for the past 100+ years within or adjacent to the plan area; and, the prior disturbance of the native sediments within the project area by agricultural plowing and ripping to a depth of at least three feet over the past 100+ years. In addition, a locational review of the recorded archaeological site information within one mile of the project area, consisting of 29 sites and/or isolated finds, suggests a focus on the former shoreline and marsh areas of Tulare Lake rather than valley areas. All of these factors strongly suggest a low potential for the discovery of buried archaeological materials during subsurface disturbance within the WSP plan area although isolated prehistoric and historic finds are possible.

Historic-Era Resources

Historical Overview

The Southern Valley Yokuts first came into contact with Europeans when Spanish explorers visited the area in approximately 1772. Over the next fifty years, contact between the Yokuts and Europeans was infrequent. In 1833, Mexican contact produced a severe epidemic throughout California that reduced the Southern Yokuts population by 75 percent. The discovery of gold in 1848 and inflow of miners and immigrants further decimated the Yokuts population.

In 1805, a Spanish expedition probably led by Gabriel Moraga recorded discovering the river, which they named *El Rio de los Santos Reyes* (River of the Holy Kings) [Three Wise Men]. At the time of the American takeover in 1848, the new government changed the name to Kings River.

In 1880, a dispute over land titles between settlers and the Southern Pacific Railroad resulted in a bloody gun battle on a farm 6 miles northwest of Hanford, where seven men died. This event became known as the Mussel Slough Tragedy.

Kings County was formed in 1893 from the western part of Tulare County. In 1909, by an act of the state legislature, 208 square miles of Fresno County territory was added to the northwest portion of Kings County. In the late 1800s and early 1900s, settlers reclaimed Tulare Lake and its wetlands for agricultural development.

In 1928, oil was discovered in the Kettleman Hills located in the southwestern part of Kings County. The Kettleman North Dome Oil Field became one of the most productive oil fields in the United States.

Lemoore Army Airfield was established for training and defense during World War II. In 1961, the U.S. Navy opened NAS Lemoore 9 miles west of Lemoore, not far from the earlier site.

The completion of the California Aqueduct in the early 1970s brought needed water for agriculture and domestic use to the west side of the County.

Historic-Era Built Environment Resources

No known Hispanic Period or American Period dwellings or other significant structures, features (e.g., adobe dwellings, or other structures, features, etc.) have been identified within or adjacent to the WSP plan area or the WSP gen-tie corridors. The field survey conducted by Basin Research Associates found no indications of surface or subsurface significant historic material on or adjacent to the plan area.

Within the WSP plan area, one historic-era feature has been recorded adjacent to the WSP boundary along the 25th Avenue alignment. This feature consists of an electrical transmission line that was recorded in conjunction with the Henrietta Substation upgrade project. This feature has been determined to not be eligible for inclusion on either the National Register of Historic Places or California Register of Historical Resources. This feature is briefly described below

> P-16-000136 consists of a portion of the Camden Junction-Henrietta and Henrietta-Tulare Lake (Line Number 702), a 31.55-mile 70-kV line between Camden Junction south to the Henrietta Substation and then south to the Tulare Lake Substation. The recorded portion of the transmission line runs parallel to a paved road from Point A/Henrietta Substation south to Point B, one mile south of the Avenal Cutoff Road. P-16-000136 has been evaluated as not eligible for inclusion on the California or National Registers.

No local, state or federal historically or architecturally significant structures, landmarks, or points of interest have been identified within or immediately adjacent to the WSP plan area. No historic properties which have been listed, determined to be eligible or potentially eligible for inclusion on the National Register of Historic Places or the California Register of Historical Resources have been identified in or adjacent to the proposed project.

Within the WSP gen-tie corridors, two historic-era built environment resources have been recorded, as described below.

> P-10-006207/CA-FRE-3645H comprises the Fresno County segment of the San Luis Canal/California Aqueduct which crosses the both gen-tie corridors west of the WSP plan area. The California Aqueduct, while not formally evaluated as a historic property, appears to meet the criteria for the National Register of Historic Places and the California Register of Historical Resources under Criterion A/1 (a planned and publicly sanctioned water conveyance public works project to facilitate development throughout the state) and criterion C/3 (complex design necessary to convey water throughout the state)
>
> P-10-006236 consists of the Jayne Avenue Bridge located near the WSP-South to Gates Gen-Tie corridor. The Jayne Avenue Bridge, a pre-stressed concrete bridge used as a crossing on the San Luis Unit Canal, has been evaluated as eligible under criterion C/3 as a contributing element of the California Aqueduct. The bridge is a character defining feature of the California Aqueduct and is a significant and distinguishable engineering entity significant for its type, period and method of construction.

There are no additional record historical-era cultural sites located within or adjacent to the WSP plan area or gen-tie corridors that have been determined to be eligible for listing to the National Register of Historic Places or the California Register of Historical Resources.

3.5.2. REGULATORY CONTEXT

State and Federal

California Environmental Quality Act (CEQA)

CEQA requires that a lead agency determine potential impacts to both historical and archaeological cultural resources and mitigate impacts on those resources. The definitions for culturally significant resources, as contained in the CEQA statute (Public Resources Code [PRC] §21000 et seq.) and the CEQA Guidelines (California Code of Regulations [CCR] §15000 et seq.), are summarized below.

Historical Resources: CEQA stipulates that any resource listed in, or eligible for listing in, the California Register of Historical Resources (CRHR) is presumed to be historically or culturally significant (PRC §21084.1; CCR §15064.5). (See below for CRHR eligibility criteria.) Resources listed in a local historic register or deemed significant in a historical resource survey (as provided under Section 5024.1g) are presumed historically or culturally significant unless the preponderance of evidence demonstrates they are not. A resource that is not listed in, or determined to be eligible for listing in, the CRHR, is not included in a local register of historic resources, or not deemed significant in a historical resource survey may nonetheless be deemed historically significant by the lead agency (PRC §21084.1). Under CEQA, "[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. For purposes of this section, an historical resource is a resource listed in, or determined to be eligible for listing in, the California Register of Historical Resources" (PRC §21084.1).

Archaeological Resources: Under CEQA Guidelines Section 15064.5, an archaeological resource may be determined to be an historical resource, as defined above. If an archaeological resource does not meet the criteria for "historical resource," it may be determined to be "unique archaeological resource" under CEQA. PRC Section 21083.2 (g) defines a "unique archaeological resource" to be: 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 meets any of the following criteria: (1) contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information; (2) has a special and particular quality such as being the oldest of its type or the best available example of its type; or, (3) is directly associated with a scientifically recognized important prehistoric or historic event or person.

Tribal Resources: Assembly Bill 52 (AB 52) provides protections for tribal cultural resources. All lead agencies as of July 1, 2015 approving projects under CEQA are required, if formally requested by a culturally affiliated California Native American Tribe, to consult with such tribe regarding the impacts of a project on tribal cultural resources prior to the release of any negative declaration, mitigated negative declaration (MND) or a notice of preparation (NOP) for an environmental impact report (EIR).

Under PRC Section 21074, tribal cultural resources include site features, places, cultural landscapes, sacred places or objects that are of cultural value to a tribe that are eligible or listed on the CRHR or a local historic register or that the lead agency has determined to be a significant tribal cultural resource.

Tribal consultation is to continue until mitigation measures are agreed to, unless the tribe or the lead agency concludes in good faith that an agreement cannot be reached. In the case of agreement, the lead agency is required to include the mitigation measures in the environmental document along with the related Mitigation Monitoring and Reporting Program (MMRP) (see PRC Section 21084.3). If no agreement is reached, the lead agency must still impose all feasible measures necessary for a project to avoid or minimize significant adverse impacts on tribal cultural resources (PRC Section 21084.3). (For a further discussion, see Impact CUL-3.)

California Register of Historical Resources (CRHR)

In order for a resource to be eligible for the California Register of Historical Resources, it must satisfy all of the following three criteria:

A. A property must be significant at the local, state or national level, under one or more of the following four *criteria of significance* (these are essentially the same as National Register criteria with more emphasis on California history):

    1. The resource is associated with events or patterns of events that have made a significant contribution to the broad patterns of local or regional history and cultural heritage of California or the United States.
    2. The resource is associated with the lives of persons important to the nation or to California's past.
    3. The resource embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master, or possesses high artistic values.
    4. The resource has the potential to yield information important to the prehistory or history of the state or the nation (this criterion applies primarily to archaeological sites).

B. The resource retains historic integrity (defined below); and,

C. It is 50 years old or older (except for rare cases of structures of exceptional significance).

For purposes of Criterion B, the California Register regulations define "integrity" as "…the authenticity of a property's physical identity, evidenced by the survival of characteristics that existed during the property's period of significance," that is, it must retain enough of its historic character or appearance to be recognizable as an historical resource. Following the National Register integrity criteria, California Register regulations specify that integrity is a quality that applies to historic resources in the following seven ways: location, design, setting, materials, workmanship, feeling and association. A property must retain most of these qualities to possess integrity.

In the following evaluation, the use of the phrase "…appears potentially eligible or not eligible" for the California Register is standard practice in an evaluation discussion. Only the State Office of Historic Preservation can make an actual determination of eligibility for the California Register.

National Register of Historic Places

The National Register of Historic Places also includes standards for determining eligibility for listing. These standards are very similar to those of the California Register except that they are more focused on national rather than state history. The National Register standards and criteria are as follows:

1. A property must be fifty years old or meet criteria for exceptionally fine design or exceptional historical association.
2. The resource must retain architectural and historical integrity.
3. The resource must meet at least one of the following criteria:
   a. Are associated with events that have made a significant contribution to the broad patterns of history;
   b. Are associated with the lives of persons significant in our past;
   c. Embody distinctive characteristics of type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
   d. Have yielded, or may be likely to yield, information important in prehistory or history.

Native American Heritage Commission

The Native American Heritage Commission (NAHC) is responsible for inventorying places of religious or social significance to Native Americans and identifying known graves and cemeteries of Native Americans on private lands. Public Resources Code Section 5097.98 specifies the 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 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

Section 7050.5 of the Health and Safety Code requires 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.

Kings County

Since the Westlands Solar Park is located entirely within Kings County, the County has discretionary approval authority for all WSP solar projects. Therefore, the County's plans, policies, and regulations pertaining to cultural resources are applicable to WSP solar development.

Kings County General Plan

The 2035 Kings County General Plan contains the following goals, objectives, and policies related to cultural resources that are relevant to the Westlands Solar Park:

Resource Conservation Element

I. Archaeological, Cultural, and Historical Resources

RC GOAL I1 *Preserve significant historical and archaeological sites and structures that represent the ethnic, cultural, and economic groups that have lived and worked in Kings County.*

RC OBJECTIVE I1.1 *Promote the rehabilitation or adaptation to new uses of historic sites and structures.*

RC Policy I1.1.3: Encourage the protection of cultural and archaeological sites with potential for placement on the National Register of Historic Places and/or inclusion in the California Inventory of Historic Resources.

RC Policy I1.1.4: Refer applications that involve the removal, destruction, or alteration of proposed or designated historic sites or County landmarks to the Kings County Museum Advisory Committee or its successor for recommended mitigation measures.

RC OBJECTIVE I1.2 *Identify potential archaeological and historical resources and, where appropriate, protect such resources.*

RC Policy I1.2.1: Participate in and support efforts to identify significant cultural and archaeological resources and protect those resources in accordance to Public Resources Code 5097.9 and 5097.993.

RC Policy I1.2.2: Continue to solicit input from local Native American communities in cases where development may result in disturbance to sites containing evidence of Native American Activity and/or to sites of cultural importance.

RC Policy I1.1.5: The County will respectfully comply with Government Code §6254.(r) and 6254.10 by protecting confidential information concerning Native American cultural resources. For example, adopting internal procedures such as

keeping confidential archaeological reports away from public view or discussion in public meetings.

RC Policy I1.1.6: The County shall work in good faith with the Santa Rosa Rancheria Tachi Yokut Tribe ("Tribe"), the developer and other parties if the Tribe requests return of certain Native American artifacts from private development projects (e.g., for interpretive or educational value). The developer is expected to act in good faith when considering the Tribe's request for artifacts. Artifacts not desired by the Tribe shall be placed in a qualified repository as established by the California State Historical Resources Commission (see Guidelines for the Curation of Archaeological Collections, May 1993). If no facility is available, then all artifacts shall be donated to the Tribe.

No historical sites are noted within the WSP plan area or its immediate vicinity (see 2035 General Plan Resource Conservation Element – Figure RC-24 - Kings County Historical Sites).

Kings County Code of Ordinances

The County Code includes no requirements pertaining to the identification or protection of historic, archaeological, or paleontological resources.

Fresno County

Since no portion of the Westlands Solar Park is located within Fresno County, the County's plans, policies and regulations are not applicable to WSP solar development. Transmission projects that are to be constructed or co-sponsored by an investor-owned utility (IOU) such as PG&E are subject to the sole permitting jurisdiction of the California Public Utilities Commission (CPUC) and are exempt from local jurisdiction. However, CPUC General Order 131-D requires public utilities to coordinate with local jurisdictions regarding consistency of their projects with local plans and policies. Transmission lines that may be privately owned (such as gen-ties) are not under CPUC jurisdiction, and thus are subject to Fresno County jurisdiction and may require the issuance of a conditional use permit from the County.

Fresno County General Plan

The Open Space and Conservation Element of the Fresno County General Plan includes several policies related to Cultural and Historical Resources. These policies require that cultural resources be identified during the course of CEQA review for discretionary development projects, and that impacts to identified resources be mitigated to the extent feasible. The Open Space and Conservation Element is accessible at the following web address: http://www2.co.fresno.ca.us/4510/4360/General_Plan/GP_Final_policy_doc/Open_Space_Element_rj.pdf

Native American Consultation

During the course of WSP plan development, the Native American Heritage Commission (NAHC) was contacted by Basin Research Associates on three separate occasions (2009, 2015, and 2016) to request

searches of the *Sacred Lands Inventory*. On each occasion, the NAHC record search was negative for Native American resources in the immediate project area (Basin Research 2017).

Based on lists of tribal contacts provided by the Native American Heritage Commission (NAHC), Basin Research Associates conducted three rounds of contacts with the Native American individuals/groups recommended by the NAHC. Letters soliciting additional information were sent to up to 10 individuals/groups on these occasions, with follow-up contact by email and telephone calls. With the exception of the Santa Rosa Rancheria Tachi Yokut Tribe, the individuals and groups contacted either expressed no concerns or interest in the project, or did not respond.

Tribal Consultation Pursuant to AB 52

Westlands Water District (WWD) has received two formal requests from tribal governments to be notified of any projects to be undertaken by WWD that involve CEQA documentation, as provided in Public Resources Code Section 21080.3.1. The two tribes requesting notification include the Santa Rosa Rancheria Tachi Yokut Tribe and the Dumna Wo Wah Tribal Government. On September 8, 2017, WWD provided formal written notification of the subject WSP Master Plan and Gen-Tie Corridors Plan EIR to both tribes. Both tribal governments subsequently submitted formal requests for consultation regarding possible adverse effects of the subject plans on tribal cultural resources.
Consultations with both tribal governments have been initiated by WWD in accordance with Public Resources Code Section 21080.3.1.

3.5.3. ENVIRONMENTAL IMPACT ANALYSIS

SIGNIFICANCE CRITERIA

Cultural Resources

Based on the State CEQA Guidelines, Appendix G, the project would be considered to result in a significant impact to cultural resources if it would:

a. Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 of the State CEQA Guidelines. (Impact CUL-1)

b. Cause a substantial adverse change in the significance of an archaeological resource as defined in Section 15064.5 of the State CEQA Guidelines. (Impact CUL-1)

c. Disturb any human remains, including those interred outside of formal cemeteries. (Impact CUL-2)

[Note: CEQA definitions for historical and archaeological resources are discussed in Section *3.5.2. Regulatory Context* above.]

Tribal Cultural Resources

Based on the State CEQA Guidelines, Appendix G, the project would be considered to result in a significant impact to tribal cultural resources if it would:

d. 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:

   i) Listed or eligible for listing in the California Register of Historical Resources, or I a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or. (Impact CUL-3)

   ii) 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 5024.1, the lead agency shall consider the significance of the resource to a California Native Tribe. (Impact CUL-3)

IMPACTS AND MITIGATION

Impact CUL-1. Disturbance to Cultural Resources

***Westlands Solar Park*. There are no known historical or archaeological resources within the WSP plan area or its immediate vicinity, and the probability that any are present is low. However, it is possible that previously unknown cultural resources may be present within the WSP plan area which could be adversely affected by grading, excavation, and construction for the solar facilities. (*Less-than-Significant Impact with Mitigation*)**

***WSP Gen-Tie Corridors*. There is a low to moderate potential for buried archaeological resources to be present within the gen-tie corridors. There is a potential that ground disturbing activities associated with construction of the gen-tie projects could adversely affect previously unknown cultural resources. (*Less-than-Significant Impact with Mitigation*) There are two previously recorded historic-era built environment features within or adjacent to the WSP gen-tie corridors; however, these features would not be adversely affected by the gen-tie projects. (*Less-than-Significant Impact*)**

This impact analysis addresses significance criteria 'a' and 'b' above.

Westlands Solar Park

Archival research and visual reconnaissance of the WSP plan area suggests that no significant archaeological resources are present within the WSP plan area. The majority of the WSP plan area has been disturbed by agricultural activities, which may have disturbed or displaced historical or prehistoric

artifacts at or near the ground surface. However, it is possible that intact historic-era or prehistoric resources may be buried below the disturbed upper layer of soil. If so, the excavation associated with WSP solar development could expose as-yet undetected resources. It is also possible that human remains could be encountered as human remains have been associated with several of the prehistoric archaeological resources along the former Tulare Lake shoreline. The potential destruction or disturbance of buried archaeological resources would represent a *significant impact*.

Archival research and visual reconnaissance of the WSP plan area also suggests that no historically significant built environment resources are present within the WSP plan area. The plan area is within an active agricultural area that includes recent and modern infrastructure associated with agriculture including irrigation canals and ditches. The plan area is crossed by paved and unimproved roads, electric transmission lines and gas pipelines. None of these features appear to be historically significant. However, it is possible that previously undiscovered historic resources may be present that may be disturbed or destroyed as a result of grading, excavation, and construction for the WSP solar facilities. The potential destruction or disturbance of historic resources would represent a *significant impact*. With the implementation of Mitigation Measure CUL-1 below, the impact would be reduced to *less than significant*.

In this context it is important to note that the agricultural lands within the WSP plan area have been subject to intensive cultivation for many decades, including annual plowing and occasional deep ripping to depths of up to 3 feet. As such, the near-surface soils have been subject to heavy disturbance for many years. In addition, solar PV projects do not require engineered grades within the solar arrays and require only minor grading or rolling to smooth out any deep furrows. The internal access driveways would be graded and compacted to provide durable traveling surfaces, and transformer pads would be placed on graded and compacted soil, but these graded and compacted areas comprise less than 10 percent of a typical solar project. Limited grading of near-surface soils would be required in portions of the remaining 90 percent of each solar project, and no mass grading would be required.

The decommissioning of WSP solar projects would involve removal of the structural elements and support facilities, followed by reclamation of the soil to pre-project conditions. Decommissioning would not involve disturbance of soils that were not disturbed during project construction. Therefore, the potential impact of decommissioning upon buried archaeological resources would be *less than significant*.

WSP Gen-Tie Corridors

Archival research and visual reconnaissance of the WSP gen-tie corridors suggests that no significant archaeological resources are present within the gen-tie corridors. The majority of the gen-tie corridors area has been disturbed by agricultural activities, which may have disturbed or displaced historical or prehistoric artifacts at or near the ground surface. However, it is possible that intact historic-era or prehistoric resources may be buried below the disturbed upper layer of soil. If so, the excavation associated with the gen-tie projects could expose as-yet undetected resources. It is also possible that human remains could be encountered as human remains have been associated with several of the prehistoric archaeological resources along the former Tulare Lake shoreline. The potential destruction or disturbance of buried archaeological resources would represent a *significant impact*. With the implementation of Mitigation Measure CUL-1 below, the impact would be reduced to *less than significant.*

Two National Register of Historic Places and California Register of Historical Resources eligible properties are present within the WSP Gen-Tie Corridors. These include the California Aqueduct, which would be crossed by both gen-tie lines, and the Jayne Avenue Bridge over the California Aqueduct, which is adjacent to the southern gen-tie corridor. The gen-tie projects would include tubular steel poles (TSPs or monopoles), which would be spaced approximately ¼ mile apart. The monopoles would support overhead conductor cables, which would be over 100 feet above ground level near the monopoles, and at least 25 feet above ground level at the lowest point of conductor sag between monopoles. No guy wires would be installed to support the monopoles, which would be adequately supported by deep reinforced concrete footings.

With respect to the gen-tie crossings over the California Aqueduct, there is a large degree of variability with respect to the lengths of conductor spans (which can range from 800 feet to 1,600 feet), which in turn provides a high degree of flexibility with respect to planning the locations of monopoles. Although the gen-tie projects have not yet been designed, it is anticipated that the gen-tie monopoles will be planned to be located well outside the boundaries of California Aqueduct channel and adjacent levees. The potential effect of the gen-tie projects on the California Aqueduct will be addressed in detail at the project-specific level of environmental review and clearance. However, at this programmatic-level of review, it is reasonable to assume that the gen-tie projects will be planned and designed to avoid the California Aqueduct, and that the gen-ties will not affect any of the qualities that make the California Aqueduct eligible for the National and California Registers. Therefore, it is expected that the impacts of the gen-tie projects upon the California Aqueduct would be *less than significant*.

Regarding the Jayne Avenue Bridge over the California Aqueduct, the southern gen-tie corridor is located adjacent and parallel to the bridge on the north. The nearest monopoles would be set back at least 50 feet from the Jayne Avenue right-of-way, and would be planned to avoid the California Aqueduct and adjacent levees, as discussed above. The nearest conductor cables would be at least 50 feet to the north and would be suspended at least 25 feet above ground level. The potential effect of the gen-tie projects on the Jayne Avenue Bridge will be addressed in detail at the project-specific level of environmental review and clearance. However, at this programmatic-level of review, it is reasonable to assume that the southern gen-tie project will be planned and designed to avoid the Jayne Avenue Bridge, and that the gen-tie will not affect any of the qualities that make the Jayne Avenue Bridge eligible for the National and California Registers. Therefore, it is expected that the impacts of the gen-tie projects upon the Jayne Avenue Bridge would be *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. Implement MM CUL-1.**

***WSP Gen-Tie Corridors*. Implement MM CUL-1.**

MM CUL-1: Protection of Cultural Resources. In order to avoid the potential for impacts to historic and prehistoric archaeological resources, the following measures shall be implemented in conjunction with the construction of each WSP solar generating facility and gen-tie project:

a. Conduct Surveys for Cultural Resources. Prior to any ground disturbance for each WSP solar facility and gen-tie project, the project proponent for each respective project shall undertake the following:

- **Retain the services of a qualified archaeological consultant meeting the Secretary of Interior's Professional Qualifications Standards in prehistoric or historical archaeology, and having expertise in California prehistoric and historical archaeology.**

- **Authorize the archaeological consultant to conduct a site-specific field investigation for cultural resources, and prepare a report containing determinations of significance of any identified cultural resources and recommendations for mitigation, as appropriate.**

- **Prior to any ground disturbance, the applicant shall offer interested Tribes the opportunity to provide a Native American Monitor during ground disturbing activities during both construction and decommissioning. Tribal participation would be dependent upon the availability and interest of the Tribe.**

b. Conduct Pre-Construction Worker Training and Tribal Coordination. Prior to the issuance of building permits for each WSP solar facility and gen-tie project, the project proponent for each respective project shall undertake the following:

- **Authorize the archaeological consultant to provide a pre-construction briefing to supervisory personnel of any excavation contractor to alert them to the possibility of exposing significant historic or prehistoric archaeological resources within the project area. The briefing shall discuss any archaeological objects that could be exposed, the need to stop excavation at the discovery site, and the procedures to follow regarding discovery protection and notification of the project proponent and archaeological team.**

- **The applicant shall note on any plans that require ground disturbing excavation that there is a potential for exposing buried cultural resources.**

- **Prior to initiation of construction, the applicant shall conduct a site visit in concert with the appropriate Native American Tribe(s) in order to provide an opportunity for the Tribe(s) to assess the site and discuss their recommendations. During the site visit a cultural sensitivity class will be taught by the appropriate Native American Tribe(s) for the construction crew.**

c. Implement Procedures for Inadvertent Discoveries. The following procedures shall be implemented to address inadvertent discovery of cultural resources during construction:

- **Retain the professional archaeologist during all ground disturbing activity during construction and decommissioning for the project to review, identify and evaluate cultural resources that may be inadvertently exposed during construction. Should previously unidentified cultural resources be discovered during ground disturbing activities of the project, the project proponent shall cease work within 100 feet of the resources, and Kings County Community Development Agency (CDA) (or the Fresno County Department of Public Works and Planning for discoveries in Fresno County) shall be notified immediately. The archaeologist shall review and evaluate any discoveries to determine if they are historical resource(s) and/or unique archaeological resources under CEQA.**

- **If the professional archaeologist determines that any cultural resources exposed during the initial ground survey or during construction constitute a historical resource and/or unique archaeological resource, he/she shall notify the project proponent and other appropriate parties of the evaluation and recommended mitigation measures to mitigate the impact to a less-than-significant level. Mitigation measures may include avoidance, preservation in-place, recordation, additional archaeological testing and data recovery, among other options. Treatment of any significant cultural resources shall be undertaken with the approval of the Kings County CDA (or the Fresno County Department of Public Works and Planning for discoveries in Fresno County). The archaeologist shall document the resources using DPR 523 forms and file said forms with the California Historical Resources Information System (CHRIS), Southern San Joaquin Valley Information Center. The resources shall be photo-documented and collected by the archaeologist for submittal to theappropriate Native American Tribe(s). The archaeologist shall be required to submit to the applicable County for review and approval a report of the findings, including determinations as to the eligibility of any identified sources for listing in the California Register of Historical Resources, and method of curation or protection of the resources. Further grading or site work within the area of discovery shall not be allowed until the preceding steps have been taken.**

Impact CUL-2. Disturbance to Human Remains

***Westlands Solar Park*. Ground disturbing activities associated with the development of the WSP solar facilities could disturb previously undiscovered human remains, including those interred outside of formal cemeteries. (*Less-than-Significant Impact with Mitigation*)**

***WSP Gen-Tie Corridors*. Ground disturbing activities associated with the construction of the WSP gen-tie projects could disturb previously undiscovered human remains, including those interred outside of formal cemeteries. (*Less-than-Significant Impact with Mitigation*)**

This impact analysis addresses significance criterion 'c' above.

Westlands Solar Park

No human remains or burials have been previously recorded or identified within the WSP plan area. Four archaeological sites with human remains have been recorded along the prehistoric shoreline of Tulare Lake to the east of the WSP plan area. Although unlikely, previously unknown human remains could be inadvertently disturbed by construction activities associated with WSP solar projects. However, if human remains are encountered, any disturbance would represent a *significant impact*. With the implementation of Mitigation Measure CUL-2 below, the impact would be reduced to *less than significant.*

As discussed under Impact CUL-1 above, the decommissioning of WSP solar projects would involve removal of the structural elements and support facilities, followed by reclamation of the soil to pre-project conditions. Decommissioning would not involve disturbance of soils that were not disturbed during project construction. Therefore, the potential impact of decommissioning upon previously unknown human remains would be *less than significant*.

Westlands Transmission Corridors

No human remains or burials have been previously recorded or identified within the gen-tie corridors. Although unlikely, previously unknown human remains could be inadvertently disturbed by ground disturbing activities associated with the gen-tie projects. However, if human remains are encountered, any disturbance would represent a *significant impact*. With the implementation of Mitigation Measure CUL-2 below, the impact would be reduced to *less than significant.*

Mitigation Measures:

***Westlands Solar Park*. Implement MM CUL-2.**

***WSP Gen-Tie Corridors*. Implement MM CUL-2.**

MM CUL-2. Protection of Buried Human Remains. In order to avoid the potential for impacts to any buried human remains which may be present, the following measures shall be implemented, as necessary, in conjunction with the construction of each WSP solar facility and gen-tie project:

- **Pursuant to State Health and Safety Code Section 7050.5(e) and Public Resources Code Section 5097.98, if human bone or bone of unknown origin is found at any time during on- or off-site construction, all work shall stop in the vicinity of the find and the Coroner of Kings or Fresno County, as applicable, shall be notified immediately. If the remains are determined to be Native American, the Coroner shall notify the California State Native American Heritage Commission (NAHC), who shall identify the person believed to be the Most Likely Descendant (MLD).**

The project proponent and MLD, with the assistance of the professional archaeologist, shall make all reasonable efforts to develop an agreement for the treatment of human remains and associated or unassociated funerary objects with appropriate dignity (CEQA Guidelines Sec. 15064.5(d)). The agreed upon treatment shall address the appropriate excavation, removal, recordation, analysis, custodianship, curation, and final disposition of the human remains and associated or unassociated funerary objects. California Public Resources Code allows 48 hours for the MLD to make their wishes known to the landowner after being granted access to the site. If the MLD and the other parties do not agree on the reburial method, the project will follow Public Resources Code Section 5097.98(e) which states that ". . . the landowner or his or her authorized representative shall reinter the human remains and items associated with Native American burials with appropriate dignity on the property in a location not subject to further subsurface disturbance."

Impact CUL-3. Impacts to Tribal Cultural Resources

***Westlands Solar Park*. There are no known tribal cultural resources within the WSP plan area or its immediate vicinity, and the probability that any are present is low. However, it is possible that previously unknown tribal cultural resources may be present within the WSP plan area which could be adversely affected by grading, excavation, and construction for the solar facilities. (*Less-than-Significant Impact with Mitigation*).**

***WSP Gen-Tie Corridors*. There are no known tribal cultural resources within the WSP gen-tie corridors or their immediate vicinity, and the probability that any are present is low. However, it is possible that previously unknown tribal cultural resources may be present within the WSP plan area which could be adversely affected by grading, excavation, and construction for the solar facilities. (*Less-than-Significant Impact with Mitigation*)**

This impact analysis addresses significance criterion 'd' above.

Westlands Solar Park and WSP Gen-Tie Corridors

As discussed under Impact CUL-1 above, archival research and reconnaissance of the WSP plan area and gen-tie corridors by Basin Research Associates indicates that no significant archaeological resources are present within the WSP plan area. The majority of the lands in the study area have been disturbed by agricultural activities, which may have disturbed or archaeological resources at or near the ground surface. However, it is possible that intact archaeological resources may be buried below the disturbed upper layer of soil. If so, the excavation associated with WSP solar and gen-tie projects could expose as-yet undetected resources. It is also possible that human remains could be encountered as human remains have been associated with several of the prehistoric archaeological resources along the former Tulare Lake shoreline. The potential destruction or disturbance of buried archaeological resources and

human remains would represent a *significant impact*. With the implementation of Mitigation Measures CUL-1 and CUL-2 above, the impact to archaeological resources and human burials would be reduced to *less than significant.*

Under Public Resources Code Section 21074, tribal cultural resources include site features, places, cultural landscapes, sacred places or objects that are of cultural value to a tribe that are eligible or listed on the CRHR or a local historic register or that the lead agency has determined to be a significant tribal cultural resource. To date, no National Register of Historic Places or California Register of Historical Resources eligible or listed historic properties/cultural resources, and no known ethnographic, traditional or contemporary Native American use areas and/or other features of cultural significance have been identified in or adjacent to the WSP or WSP Gen-Tie Corridors. Consultations with tribal governments likewise have not identified specific tribal cultural resources within or near the study area. However, as with archaeological resources discussed above, it is possible that tribal cultural resources could be discovered during construction of WSP solar or gen-tie facilities. The potential adverse impacts to tribal cultural resources would represent a *significant impact*. With the implementation of Mitigation Measure CUL-3 below, in addition to Mitigation Measures CUL-1 and CUL-2 above, the impact to tribal cultural resources would be reduced to *less than significant.*

Mitigation Measures:

***Westlands Solar Park*. Implement MM CUL-3 below, and MMs CUL-1 and CUL-2 above.**

***WSP Gen-Tie Corridors*. Implement MM CUL-3 below, and MMs CUL-1 and CUL-2 above.**

MM CUL-3. Protection of Tribal Cultural Resources. In order to avoid the potential for impacts to tribal cultural resources which may be present, the following measures shall be implemented, as necessary, in conjunction with the construction of each WSP solar facility and gen-tie project:

- **Consult with Native American Tribes. Prior to public release of the CEQA document for each project, the lead agency shall initiate consultation with Native American Tribe(s) which have a traditional and cultural affiliation to the project site, in accordance with Public Resources Code Section 21080.3.1.**

- **Mitigation for Tribal Cultural Resources. If any tribal cultural resources are identified through consultation with the Native American Tribe(s), the lead agency shall consult and work with the tribe(s) to develop feasible mitigation measures or alternatives that would avoid impacts or develop and implement treatment plans that would substantially lessen impacts on identified tribal cultural resources, in accordance with Public Resources Code Section 21083(b)(2).**

Cumulative Impacts

Impact CUL-4. Cumulative Impacts to Cultural Resources

***Westlands Solar Park*. The WSP solar development would not make a cumulatively considerable contribution to cultural resource impacts with mitigation; therefore, the WSP solar projects would not have a significant cumulative impact on cultural resources with mitigation. (*Less-than-Significant Cumulative Impact with Mitigation*)**

***WSP Gen-Tie Corridors*. The WSP gen-tie projects would not make a cumulatively considerable contribution to cultural resource impacts with mitigation; therefore, the gen-tie projects would not have a significant cumulative impact on cultural resources with mitigation. (*Less-than-Significant Cumulative Impact with Mitigation*)**

Geographic Scope of Cumulative Impacts

The potential for cumulative destruction or disturbance of cultural resources is statewide in scope and impact. For purposes of this analysis, the geographic scope of the cumulative impact analysis for cultural resources with respect to the WSP solar development and the WSP gen-tie projects includes Kings County and southwestern Fresno County. The cumulative projects considered in this analysis are shown in Figure PD-10 and are listed in Table PD-10 in Section *2.5. Completed, Approved, and Pending Projects/Introduction to the Cumulative Impact Analysis*.

Westlands Solar Park

Near Term

There are no known archaeological, historical, or tribal cultural resources within or immediately adjacent to the WSP plan area or the other cumulative project sites. Although unlikely, it is possible that previously undiscovered cultural materials may be buried on cumulative project sites which could be adversely affected by grading and construction for the projects. However, any such resources would be protected through implementation of the General Plan policies of Kings County and Fresno County, as listed in Section *3.5.2. Regulatory Context* above. The cumulative projects are also subject to CEQA requirements for avoiding or mitigating impacts to cultural and tribal resources, in the same manner as set forth under MMs CUL-1, CUL-2, and CUL-3 above. The appropriate mitigation requirements would be implemented through conditions of approval for each project. The application of these measures to each near-term cumulative project would mitigate any potential cultural and tribal cultural resource impacts to a level such that the cumulative impact would be *less than significant*.

Far Term

For purposes of the far-term cumulative analysis, the buildout of the designated urban land uses under the Kings County and Fresno County General Plans, as well as buildout under the General Plans of incorporated cities within Kings County and southwestern Fresno County, serves to define the nature and location of cumulative land uses anticipated under far-term conditions.

As discussed for near-term conditions above, the continued implementation of General Plan policies providing for protection of cultural resources, together with CEQA review and locally-enforced permit requirements for avoiding or mitigating impacts to historical, archaeological, and tribal cultural resources, would ensure that far-term cumulative impacts to cultural and tribal resources are *less than significant with mitigation*.

WSP Gen-Tie Corridors

Near Term

As discussed in Section *3.5.1. Environmental Setting*, the WSP gen-tie corridors include two previously recorded historic-era built environment features and no archaeological sites. There may be additional previously unknown cultural and tribal cultural resources within the gen-tie corridors. Although these resources could be subject to adverse impacts from ground disturbing activities associated with gen-tie project construction, it is anticipated that all potential impacts would be mitigated to less-than-significant levels through implementation of MMs CUL-1, CUL-2, and CUL-3 above. Although unlikely, it is possible that previously undiscovered cultural and tribal cultural resources may occur on cumulative project sites which could be adversely affected by grading and construction for those projects. However, any such resources would be protected through implementation of the General Plan policies of Kings and Fresno counties, as discussed in Section *3.5.2. Regulatory Context* above. The cumulative projects are also subject to CEQA requirements for avoiding or mitigating impacts to cultural resources, in the same manner as set forth under MMs CUL-1, CUL-2, and CUL-3 above. The appropriate mitigation requirements would be implemented through conditions of approval for each project. The application of these measures to each near-term cumulative project would mitigate any potential cultural and tribal cultural resource impacts to a level such that the cumulative impact would be *less than significant*.

There are two register eligible historic-era built environment features that are crossed by the WSP gen-tie corridors. These include the California Aqueduct, which is crossed by both gen-tie corridors, and the Jayne Avenue Bridge over the Aqueduct, which is adjacent and parallel to the southern gen-tie corridor. As discussed under Impact CUL-1 above, it is anticipated that the WSP gen-tie projects will be designed to avoid both of these historic-era features, and that the gen-ties will not affect any of the qualities that make these features eligible for the National and California Registers. Therefore, it is expected that the impacts of the gen-tie projects upon these features would be less than significant. Similarly, the Central Valley Power Connect transmission project would cross the California Aqueduct. Given the inherent flexibility of transmission projects with respect to the siting of transmission towers, it is anticipated that this cumulative project would also be planned and designed to avoid the California Aqueduct and not affect any of the qualities that make the Aqueduct eligible for the National and California Registers. There are no other near-term cumulative projects that could have a potentially adverse effect on this or any other historical-era built environment features. Therefore, the potential near-term cumulative impact upon historic-era resources would be *less than significant*.

Far Term

The far-term development planned for areas in the vicinity of the WSP gen-tie corridors could potentially result in cumulatively significant impacts to archaeological and tribal cultural resources in the far term.

However, as discussed above for near-term conditions, it is anticipated that the CEQA review processes in each county would ensure that projects are evaluated for cultural sensitivity, and that mitigation measures would be required as appropriate to avoid destruction of any archaeological or tribal cultural resources. Therefore, cumulative impacts to archaeological and tribal cultural resources from the WSP gen-tie projects combined with related projects in the far term are anticipated to be *less than significant with mitigation*.

The potential far-term impacts to historic-era built environment resources depends on the nature of the cumulative project and its proximity to any register-eligible historic features. Although the location and nature of far-term cumulative development that may be proposed in the study area cannot be foreseen, it is most likely that such development would mainly consist of solar projects or transmission lines, as discussed under Near Term above. Given the design flexibility inherent in both of these types of projects, it is anticipated that any register-eligible resources, such as the California Aqueduct, would be avoided by these projects and that they would not affect any of the qualities that make the features eligible for the registers. Therefore, the potential far-term cumulative impact upon historic-era resources would be *less than significant*.

Mitigation Measures:

Westlands Solar Park. **Implement MM CUL-1, MM CUL-2, and MM CUL-3. No additional mitigation is required.**

WSP Gen-Tie Corridors. **Implement MM CUL-1, MM CUL-2, and MM CUL-3. No additional mitigation is required.**

REFERENCES/BIBLIOGRAPHY – CULTURAL RESOURCES

Basin Research2017 — Basin Research Associates. 2017. *Cultural Resources Review – Programmatic Environmental Review – Westlands Solar Park Master Plan and WSP Gen-Tie Corridors Plan, Kings County, California*. August. (Report kept administratively confidential pursuant to California Public Records Act Section 6254.10.)

Fresno County 2000b — Fresno County. 2000. *Fresno County General Plan – Policy Document. October*. http://www2.co.fresno.ca.us/4510/4360/General_Plan area/GP_Final_policy_doc/Table_of_Contents_rj_blue.pdf Accessed June 24, 2016.

Kings County 2010a — Kings County. 2010. *2035 Kings County General Plan*. Adopted January 26, 2010. http://www.countyofkings.com/home/showdocument?id=3106 Accessed June 24, 2016.

This page intentionally left blank

3.6. GEOLOGY and SOILS

3.6.1. ENVIRONMENTAL SETTING

Regional Geology

The WSP plan area and Westlands transmission corridors are located in the central San Joaquin Valley, which is part of the Great Valley Geomorphic Province, a topographic and structural basin bounded on the east by the Sierra Nevada and on the west by the Coast Ranges, with the Diablo Range flanking the valley directly to the west. The Sierra Nevada are part of a fault block which dips gently to the southwest and forming the bedrock beneath the valley. This basement complex is composed of igneous and metamorphic rocks of pre-Tertiary age. These in turn are overlain by surficial deposits of Quaternary age, including fluvial (stream and river), alluvial (floodplain), and lacustrine (lake) strata (2.6 Million years ago to present)(see Figure GEO-1).

The Great Valley was formed by continued tectonic downwarping, approximately along its axis. In the San Joaquin Valley, this trough-like depression is asymmetrical with the deepest part of the syncline west of the valley center, approximately below the now dry Tulare, Buena Vista, and Kern lake beds. Geologic relationships show that the downwarping continued into late Pleistocene and probably Recent times.

The Quaternary Period includes the Pleistocene Epoch (about 2.6 Million to about 10,000 years ago) and the Holocene (Recent) Epoch, approximately the past 10,000 years. The Pleistocene Epoch is informally termed the Ice Age, although it also includes several warm intervals during which the climate differed little from that of today. Mountain glaciers in the Sierra Range expanded during the intervening colder intervals as did continental glaciers in parts of the Midwest. However, there is no evidence of glaciation in the Coast Ranges.

Cycles of glacial activity in the Sierras triggered cyclic changes in sediment deposition on the San Joaquin Valley floor. With the growth of the mountain glaciers, rocks and finer sediment carved from glacial valleys were carried by abundant meltwater to the margins of the San Joaquin Valley where they were deposited to form broad, low semi-conical features termed alluvial or fluvial fans. River channels shifted laterally across the fans and often split into multiple distributaries, leaving sand and gravel deposits along their former courses. Flood events left finer silts and clays on the overbank areas on the fan surface between channels and in abandoned channels. These fans eventually extended many miles radially from the points where the rivers left the steep mountain slopes, in some cases meeting other fans extending eastward from the Diablo Range. The Kings River, which now runs from the Sierras to the west-southwest, passing north of the towns of Lemoore and Hanford, produced a large fluvial fan which met another fan, generated by Los Gatos Creek, spreading from the base of the Diablo Range north of Coalinga. Together, these fans created a broad natural dam within the southern San Joaquin Valley to the northeast of the project site.

South of the dam, runoff from the surrounding drainage basins ponded to form Tulare Lake, the largest of three lakes which existed southeast of the project area until historic times. The relative height of the fan dam varied through Quaternary time with changes in climate, rates of outlet erosion, and rates of tectonic subsidence. Consequently, the depth and extent of Tulare Lake fluctuated many times.

Topography and Physical Features

Westlands Solar Park

The WSP plan area is characterized by very gradual slopes with ground elevations decreasing from west to east toward the Kings River. Ground elevations within the plan area range from a high of 285 feet above mean sea level at the western edge of the plan area to a low of 200 feet elevation at the eastern boundary, reflecting an average elevation change of 12 feet per mile (0.2 percent). Apart from irrigation and drainage canals, ditches, collection ponds, and their adjoining levees, there are no notable or unique geologic features within the WSP plan area.

The WSP plan area is entirely underlain by Quaternary alluvium, including Quaternary fluvial (stream and river), alluvial (floodplain), and lacustrine (lake) deposits. The eastern margins of the plan area, between Nevada Avenue and Laurel Avenue, are underlain by lake deposits, which comprise an area of approximately 3 square miles along the eastern WSP boundary.

The westernmost parts of the site are mapped as fan deposits and form the outer limits of alluvial fans that spread eastward from the Diablo Range hills to the west. Approximately 3 square miles of the WSP plan area is underlain by these fan deposits.

The large central portion of the WSP plan area falls between areas mapped as lake deposits and those mapped as fan deposits. These areas were occupied by streams with lower gradients than those on the fans, and left both channel deposits, consisting mostly of sand and gravel, and finer overbank deposits during flood events. The channel and overbank deposits are collectively termed basin deposits.

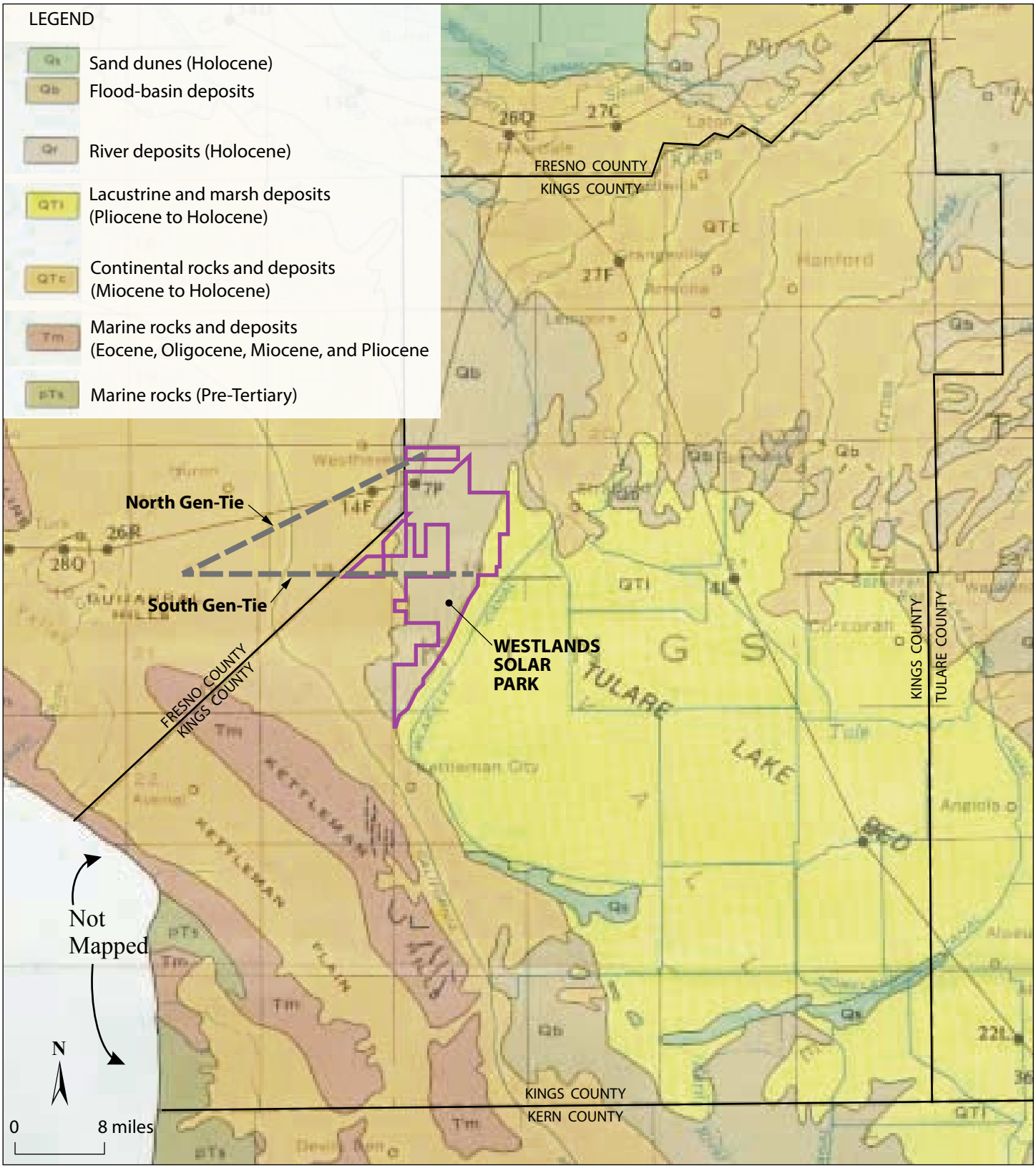
WSP Gen-Tie Corridors

The gen-tie corridors pass over relatively level ground en route to the Gates Substation near west side of the valley. The terrain along corridors rises gradually in elevation between about 215 feet at its lowest point in WSP interior to about 400 feet at the Gates Substation east of I-5.

The Kings County segments of the gen-tie corridors are predominantly underlain by basin and alluvial fan deposits, while the Fresno County segments are almost entirely underlain by alluvial fan deposits.

Tectonics and Seismicity

No portion of the WSP plan area or Westlands transmission corridors are located in an Alquist-Priolo Earthquake Fault Zone and no known active faults traverse the study areas (CGS 2010b). However, there are several active faults in the Coast Ranges to the west, including the San Andreas fault. The San Andreas Fault Zone predominantly accommodates the right-lateral strike-slip displacement across the Pacific and North American tectonic plate junction. The nearest segment of the San Andreas fault is located about 27 miles southwest of the WSP plan area, and 24 miles southwest of the nearest point of the WSP gen-tie



Base map: Kings County, 2002

General Geology

Figure GEO-1

This page intentionally left blank

corridors at the Gates Substation. The San Andreas fault it is estimated to be capable of producing a magnitude 7.7 earthquake along the nearest segments to the WSP plan area and transmission corridors.

The Nunez Fault Zone, a 3-mile long fault zone located 2 miles northwest of Coalinga, was the epicenter of the 6.2 magnitude 1983 Coalinga earthquake. The Nunez fault is a designated Alquist-Priolo Earthquake Fault Zone and is located about 24 miles west of the WSP plan area and 12 miles southwest of the WSP gen-tie corridors at the nearest points.

The western San Joaquin Valley is also traversed by a series of faults known collectively as the Great Valley Fault System, which runs parallel to and east of the San Andreas Fault zone and is believed to be the fundamental tectonic boundary between the Coast Range province and the Sierran block. This fault system is composed of blind thrust faults, which do not intersect the ground surface but can cause significant shaking and ground deformation. Blind thrust faults are not classified as active or potentially active in the same manner as faults that are present on the ground surface. The nearest segment of this fault system is the Kettleman Hills segment which runs approximately 17 miles southwest from the WSP plan area, and 12 miles from the WSP gen-tie corridors at the nearest points. The 6.0 magnitude Kettleman Hills earthquake in 1985 occurred within this fault complex (Kings County 2010a).

Seismic, Geologic, and Soils Hazards

Groundshaking

Based on Peak Ground Acceleration mapping by the California Geological Survey (CSG), the estimated peak horizontal ground acceleration within the WSP plan area during an earthquake ranges from 0.20-0.30g (g = force of gravity). The WSP gen-tie corridors would generally be subject to higher earthquake shaking intensities, given their proximity to causative faults in the Coast Ranges. Peak ground accelerations along the gen-ties would range from 0.25-0.40g. For comparison, lands located near the San Andreas Fault Zone in San Benito County are subject to peak ground accelerations of 0.60-0.80g and greater (USGS 2014).

Ground Rupture

Earthquakes are caused by the sudden displacement of earth along faults with a consequent release of stored strain energy. The fault slippage can often extend to the ground surface where it is manifested by sudden and abrupt relative ground displacement. Damage resulting directly from fault rupture generally occurs only where structures are located immediate to the fault traces that rupture. No portion of the WSP plan area or the gen-tie corridors are located within an Alquist-Priolo Earthquake Fault Zone. The closest known active or potentially active fault is the Nunez fault, which is approximately 24 miles west of the WSP plan area and 12 miles southwest of the WSP gen-tie corridors at the nearest points. There is no evidence indicating the presence of faults or fault traces in the WSP plan area or the gen-tie corridors; therefore, the potential for fault rupture at the site is extremely low.

Liquefaction

Soil liquefaction is the phenomenon in which a saturated, cohesionless soil loses shear strength during an earthquake as a result of induced shearing strains, which essentially transforms the soil to a liquid state resulting in ground failure or surface deformation. Liquefaction can result in total and differential settlement of structures. Conditions required for liquefaction typically include fine, well-sorted, loose sandy soil, high groundwater, higher intensity earthquakes, and particularly long duration of ground

shaking. Ground accelerations of at least 0.10g and ground shaking durations of at least 30 seconds are needed to initiate liquefaction. The occurrence of liquefaction is generally limited to soils located within about 50 feet of the ground surface. Groundwater is an essential factor in liquefaction since the soil loses its shear strength when increased pore pressure of groundwater becomes greater than the contact stresses between the grains of soil that keep them in contact with each other.

Within the WSP plan area and along the gen-tie corridors, most soil series have high clay content, indicating a low susceptibility to liquefaction. Although high groundwater conditions occur within the WSP plan area and in some sections of the gen-tie corridors, these areas are typically associated with clay soils. The sections of the gen-tie corridors which pass through areas of sandy loam soils are well drained and do not have groundwater levels near the ground surface, and therefore have a low susceptibility to liquefaction. Along canals and ditches, where conditions may include saturated soil conditions and unconsolidated sediments, the potential for liquefaction would be greater. However, the overall potential for liquefaction would be reduced due to distance from the nearest causative faults in the Coast Ranges.

Lateral spreading can occur with seismic ground shaking on slopes where saturated soils liquefy and flow toward the open slope face. There is a low potential for lateral spreading within the WSP plan area since it is essentially flat and does not include significant slopes. However, there is some potential for lateral spreading along the open channels of the canals and ditches that would be retained within the WSP plan area. Within the gen-tie corridors, the potential for lateral spreading would also be generally low and confined to levee banks and open faces of canals and ditches.

Seismic Settlement

Seismic settlement may occur as saturated and unsaturated granular soils become rearranged during groundshaking resulting in a volume reduction and surface deformation. The magnitude of seismic settlement is a function of the relative density of the soil and the magnitude of cyclic shear stress caused by seismic ground motion. The potential for the occurrence of an earthquake with the capability of promoting seismic settlement is low throughout most of the WSP plan area and gen-tie corridors where stiff clay soils are the most prevalent. However, some seismic settlement could occur in isolated locations on the valley floor where sandy soils are present above the groundwater table. The general potential for significant surface deformation resulting from seismic settlement is considered low for the WSP plan area and gen-tie corridors.

Landslides

Due to the relatively level terrain of the WSP plan area and the gen-tie corridors, the potential for landslides is very low.

Subsidence

Ground subsidence is typically caused when overdrafts of a groundwater basin reduces the upward hydraulic pressure that supports the overlying land surface, resulting in consolidation/settlement of the underlying soils. Land subsidence occurs when the water bearing zones are compressed due to the removal of groundwater. Under severe conditions, land subsidence can result in damage of structures and utilities on or beneath the ground surface. Additionally, the compression of the water bearing zones results in permanent reduction of the water storage capacity of the aquifer. Mapping of the San

Joaquin Valley indicates that as much as 20 feet of land subsidence may have occurred in the west-central portion of the WSP plan area between 1926 and 1970 (USBR 2011, p. 12-24).

During the droughts of 1976-77, 1987-92, 2007-09, and 2011-16, increased groundwater pumping resulted in periods of renewed compaction. After previous droughts ending in 2009, recovery to pre-drought water levels was rapid and compaction virtually ceased (USGS 2016).

Soils

The WSP plan area is covered by soils of the Lethent-Garces-Panoche soil association, as mapped by the NRCS Soil Survey of Kings County. Soils of this association typically have loam or clay loam surface soils, and clay, clay loam, sandy clay loam subsurface soils. Most of the horizons are alkaline and saline. The permeability is moderate to very slow and runoff is slow or very slow. The NRCS Soil Survey indicates that the WSP plan area includes 10 detailed soil map units. Over half of the site soils consist of Lethant clay loam which is typified by high salinity in the root zone and perched groundwater conditions. The other soil types present on the WSP site, which are listed in Table AG-1 in Section *3.2. Agricultural Resources*, largely have soil limitations similar to those associated with the Lethent clay. Most of the on-site soil types have moderate to high shrink-swell (expansion) potential. All site soils have high potential corrosivity to uncoated steel, and moderate to high corrosivity to concrete (NRCS 1986).

The soils along the WSP gen-tie corridors include several soil series as mapped by the NRCS in the Soil Survey of Western Fresno County. The soils along the gen-tie alignments are alluvial fan soils of the Cerini-Excelsior-Westhaven association. These soils consist of loam, clay loam, and sandy loam; they are well-drained and have restricted permeability (NRCS 2006).

Soil Expansion

As discussed above, the near surface soils throughout the majority of the WSP plan area have a high potential for soils expansion as indicated in NRCS descriptions for most of the soil types, which have a moderate to high shrink-swell potential (NRCS 1996, pp. 202-206). Expansive soils are subject to shrinking and swelling during seasonal wetting and drying cycles. As expansive soils dry, the soil shrinks; when moisture is reintroduced to the soil, the soil swells. Where structures are constructed over expansive clays, moisture can increase below the structure over time, resulting in swell pressures on foundations and concrete slabs which can in turn result in cracking of these structures. The sandy loam soils within most of the WSP gen-tie corridors have low to moderate expansion potential (NRCS 2006). At the eastern end of the northern gen-tie corridor, the soils consist of clay loams which have a moderate to high expansion potential (NRCS 1996).

Erosion Potential

Within the WSP plan area, the combination of clay soils and nearly flat terrain result in negligible potential for erosion by stormwater runoff. On the alluvial fans on the west side of the valley, the localized sloping terrain and looser soil cover result in a somewhat greater, but still low potential for erosion (NRCS 1986, NRCS 2006).

Due to high wind conditions which occur periodically in spring, wind erosion is prevalent on the west side of the San Joaquin Valley where the WSP plan area and gen-tie corridors are located. This results in

the loss of topsoil and crops, adverse public health effects (by airborne dispersal of spores causing Valley Fever), reduced visibility resulting in automobile accidents, and damage to public facilities.

Groundwater Conditions

Based upon the WWD's 2013 Deep Groundwater Mapping, the depth to the unconfined (upper) groundwater table within the WSP plan area ranges from a high of about 250 feet BSG (below surface grade) along Laurel Avenue near the east boundary to about 450 feet BSG at the western end along Avenal Cutoff Road at Nevada Avenue (WWD 2013).

Based upon the WWD's Shallow Groundwater Surface mapping for April 2015, the depth to the shallow groundwater on about 75 percent of the WSP plan area is between 10 and 15 feet, with depths of 5 to 10 feet occurring over approximately 20 percent of the plan area, and depths less than 5 feet occurring over approximately 5 percent at the southern end of the plan area. Along the gen-tie corridors, the depth to shallow groundwater is highly variable, ranging from 10 feet in some places to over 40 feet in others (WWD 2015).

Groundwater table elevations fluctuate with time since they are dependent upon seasonal precipitation, irrigation, groundwater pumping, and climatic conditions as well as other factors. (See Sections *3.2. Agricultural Resources* and *3.14. Utilities and Service Systems,* for additional discussions of groundwater conditions.)

Mineral Resources

Kings County contains few commercial mining and mineral extraction operations. Currently, only limited excavation of soil, sand and some gravel is excavated for commercial use. The County has only one surface mining permit for a non-active gravel operation, and two agricultural reclamation sites that were fully reclaimed. In the past, there was an open pit gypsum mine and a mercury mine in southwestern Kings County, but these mines are now closed (Kings County 2010a). Within Kings County, there are several abandoned oil wells associated with the abandoned Westhaven oil field which is located just west of the WSP plan area in Fresno County (DOGGR 2001, 2003).

Fresno County has an abundance and wide variety of mineral resources that have been extracted for many years. In western Fresno County, present-day production includes aggregates (sand and gravel), fossil fuels (oil and natural gas), metals (chromite), and construction and industrial materials (asbestos, gypsum, and limestone). There are no identified aggregate resource areas or active sand and gravel operations in the vicinity of the gen-tie corridors western Fresno County. Two large sand and gravel quarries located near Coalinga will serve as potential aggregate sources for construction of the WSP generating facilities and transmission lines (Fresno County 2000a).

Oil and natural gas production has long been a major industry in western Fresno County, particularly around Coalinga. There are a number of active and abandoned oil and gas fields in the vicinity of the WSP plan area and gen-tie corridors in Kings County and western Fresno County. The nearest to the WSP plan area is the abandoned Westhaven oil field, located just west of the WSP plan area in Fresno County. Other notable oil and gas fields in the vicinity include the Kettleman North Dome and Coalinga oil fields to the west of I-5, the abandoned gas fields at Dudley Ridge and southeast Kings County, and the several smaller

gas fields and abandoned oil fields in western Fresno County (Fresno County 2000a, DOGGR 2001, DOGGR 2003).

Within the WSP plan area, there are 9 mapped oil and gas wells, all but one of which have been plugged and abandoned. There is one inactive oil and gas well (Mary Bellochi #1) located on the north side of Nevada Avenue, just outside the WSP plan area (south of the tailwater pond), that is mapped as "idle" by DOGGR. In the vicinity of the WSP gen-tie corridors in western Fresno County, there are a number of abandoned and plugged oil and gas wells associated with the abandoned Westhaven oil field (DOGGR 2017).

3.6.2. REGULATORY CONTEXT

State

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act (formerly the Alquist-Priolo Special Studies Zone Act), requires the delineation of zones along active faults in California. The purpose of the Alquist-Priolo Act is to regulate development on or near active fault traces to reduce the hazards associated with fault rupture and to prohibit the location of most structures for human occupancy across these traces. Cities and counties must regulate certain development projects within the zones, including the preparation of geologic investigations in order to demonstrate that development sites are not threatened by future surface displacement. The nearest Alquist-Priolo Earthquake Fault Zone that is mapped in the vicinity is the Nunez Fault Zone located northwest of Coalinga, approximately 24 miles west of the Westlands Solar Park and 12 miles west of the WSP gen-tie corridors at their nearest point.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act is intended to protect the public from the effects of strong groundshaking, liquefaction, landslides, or other ground failure/hazards caused by earthquakes. This act requires the State Geologist to delineate seismic hazard zones and requires cities, counties, and other local permitting agencies to regulate certain development projects within these zones. Before a development permit is granted for a site within a seismic hazard zone, a geotechnical investigation of the site must conducted and appropriate mitigation measures incorporated into the project design. There are no Seismic Hazard Maps that include the WSP plan area or the WSP gen-tie corridors.

California Division of Oil, Gas, and Geothermal Resources

The Department of Conservation's Division of Oil, Gas, and Geothermal Resources (DOGGR) is responsible for supervising the drilling, operation, maintenance, plugging, and abandonment of oil, gas, and geothermal wells. DOGGR's regulatory program promotes responsible development of oil, natural gas, and geothermal resources in California through sound engineering practices, prevention of pollution, and implementation of public safety programs. DOGGR requires the land developments avoid building over or near plugged or abandoned oil and gas wells, or requires the remediation of wells to current DOGGR standards.

California Building Code

The California Building Code (CBC) is Part 2 of the California Building Standards Code (CBSC) which is codified as Title 24 of the California Code of Regulations (CCR). The CBC is based on the 2006 International Building Code and includes additional provisions and modifications specific to California. The CBC pertains to building design and construction and is separate from other parts of the CBSC such as the electrical code, plumbing code, mechanical code, fire code, energy code, etc. In terms of providing seismic safety, the primary objective of the CBC standards is to ensure public safety and minimize property damage in the event of an earthquake. The 2016 version of the California Building Standards Code assigns a seismic design category (SDC) to each structure. The SDC is assigned as a means of capturing both the seismic hazard, in terms of mapped acceleration parameters (spectral values), site class (defining the soil profile), and the occupancy category (based on its importance or hazardous material contents). The SDC affects design and detailing requirements as well as the structural system that may be used and its height.

Kings County

Kings County General Plan

The 2035 Kings County General Plan includes the following goals, objectives and policies related to geology, soils, and minerals that are relevant to the Westlands Solar Park:

Health and Safety Element

A. Natural Hazards

HS GOAL A2 Minimize loss of life and personal property caused by geologic hazards.

HS OBJECTIVE A2.1 Regulate new construction to achieve acceptable levels of risk posed by geologic hazards.

HS Policy A2.1.3: Prohibit new construction along known fault zones, and limit uses to nonstructural land uses.

HS Policy A2.1.4: Review all development proposals to determine whether a geotechnical soils report is required for new construction.

HS Policy A2.1.5: Consider the environmental review process for land use projects' seismic hazards, including subsidence, liquefaction, flooding, local soils, and geologic conditions.

Resource Conservation Element

B. Soil Resources

RC GOAL C1 Encourage the conservation of soil resources that are critical to the long-term protection and sustainability of the County's agricultural productivity and economy.

RC OBJECTIVE C2.2 Ensure that land use decisions are compatible with the control of soil erosion and the maintenance of soil quality.

RC Policy A2.2.1: Require erosion control measures for any development involving construction or grading near waterways, or on land with slopes over ten percent. Require that improvements such as roads and driveways be designed to retain natural vegetation and topography to the extent feasible.

RC Policy A2.2.2: Continue to require the application of construction related erosion control measures, including Stormwater Pollution Protection Plans (SWPPP) for all new construction.

G. Energy Resources

RC GOAL G1 Encourage the development of oil and gas energy sources provided that they do not degrade environmental quality.

RC OBJECTIVE G1.1 Ensure the restoration of oil and gas well sites to a pre-drilling condition after the completed use of a site.

RC Policy G1.1.1: Require the timely reclamation of oil and gas development sites upon termination of such activities to facilitate the conversion of the land to its primary land use as designated by the General Plan. Reclamation costs shall be borne by the well operator.

Kings County Code of Ordinances

Development Code

The Land Subdivisions are regulated by Article 23 of the Kings County Development Code. The Development Code requires that a preliminary soils report be prepared by a registered civil engineer for all subdivisions. If the preliminary soils report indicates the presence of critically expansive soils or other soil problems, a detailed soils investigation is required which recommends corrective action for any soils problems which are likely to result in structural damage. Article 23 of the Development Code provides that one of its objectives is to ensure that land developments incorporate proper grading and erosion control, and that the Public Works Director shall be responsible for evaluating the planned method of erosion and sedimentation control.

Kings County Building Code

The County Code of Ordinances, at Section 5-36, adopts and incorporates by reference the 2013 Edition of the California Building Code (CBC) as the Kings County Building Code, which is applicable to all building construction in Kings County. The CBC is described earlier in this section.

Fresno County

Since no portion of the Westlands Solar Park is located within Fresno County, the County's plans, policies and regulations are not applicable to WSP solar development. Transmission projects that are to be constructed or co-sponsored by an investor-owned utility (IOU) such as PG&E are subject to the sole permitting jurisdiction of the California Public Utilities Commission (CPUC) and are exempt from local jurisdiction. However, CPUC General Order 131-D requires public utilities to coordinate with local jurisdictions regarding consistency of their projects with local plans and policies (CPUC 1994). Transmission lines that may be privately owned (such as gen-ties) are not under CPUC jurisdiction, and thus are subject to Fresno County jurisdiction and may require the issuance of a conditional use permit from the County.

Fresno County General Plan

The Health and Safety Element of the Fresno County General Plan contains a number of policies related to Seismic and Geological Hazards. In general these policies require compliance with Building Code requirements for all structures, and also require preparation of geologic investigations for projects located in areas with potential for geologic hazards, and implementation of recommended engineering design measures. The Health and Safety Element is directly accessible at the following web address: http://www2.co.fresno.ca.us/4510/4360/General_Plan/GP_Final_policy_doc/Health%20Element_rj.pdf

Fresno County Code

The Fresno County Code, at Section 15.08.010, adopts and incorporates by reference the 2013 Edition of the California Building Code (CBC), with certain exceptions and amendments, which is applicable to all building construction in Fresno County. The CBC is described earlier in this section.

3.6.3. Environmental Impact Analysis

Significance Criteria

Based on the State CEQA Guidelines, Appendix G, the WSP solar development and the transmission projects would be considered to result in a significant geology and soils impact if they would:

a. Expose people or structures to potential substantial adverse effects including the risk of loss, injury, or death involving:
   i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault. (Impact GEO-1)

ii) Strong seismic ground shaking. (Impact GEO-2)
iii) Seismic-related ground failure, including liquefaction. (Impact GEO-3)
iv) Landslides. (Impact GEO-4)

b. Result in substantial soil erosion or the loss of topsoil. (Impact GEO-6)

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. (Impacts GEO-3 and GEO 4)

d. Be located on expansive soil, creating substantial risks to life or property. (Impact GEO-5)

e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater. (Impact GEO-9)

f. 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. (Impact GEO-10)

g. 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. (Impact GEO-10)

IMPACTS AND MITIGATION

Impact GEO-1. Rupture of Known Earthquake Fault

***Westlands Solar Park*. There are no known active or potentially active earthquake faults in proximity to the WSP plan area; therefore, the potential for impact from fault rupture is extremely low. (*Less-than-Significant Impact*)**

***WSP Gen-Tie Corridors*. There are no known active or potentially active earthquake faults in proximity to the WSP gen-tie corridors; therefore, the potential for impact from fault rupture is extremely low. (*Less-than-Significant Impact*)**

This impact analysis addresses significance criterion 'a-i' above.

Westlands Solar Park

The WSP plan area is not located within an Alquist-Priolo Earthquake Fault Zone. The closest mapped fault zone is the Nunez Fault Zone, located approximately 24 miles west of the plan area. The Kettleman Hills segment of the Great Valley Fault System, a series of blind thrust faults, is located approximately 17 miles southwest of the plan area. The nearest segment of the San Andreas Fault Zone is located approximately 27 miles southwest of the plan area. There is no evidence indicating the presence of faults or fault traces within the WSP plan area, and as such, the potential for fault rupture within the WSP plan area is

extremely low. Therefore, the potential hazard due to fault rupture in the WSP plan area represents a *less-than-significant* impact.

Westlands Transmission Corridors

Valley Floor Segments

The nearest active faults to the gen-tie corridors are the Nunez Fault Zone, the Great Valley Fault System, and the San Andreas Fault Zone, which are located 12 miles west, 13 miles southwest, and 24 miles southwest, respectively, from the transmission corridors at their nearest points. There are no known faults or fault traces in the vicinity of the gen-tie corridors, and as such the potential for fault rupture within these corridors is extremely low. Therefore, the potential hazard due to fault rupture within the gen-tie corridors represents a *less-than-significant* impact.

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

Impact GEO-2. Seismic Ground Shaking

***Westlands Solar Park*. Moderate ground shaking expected within the WSP plan area during a moderate to severe earthquake could potentially result in damage to solar generating facilities and other structures. (*Less-than-Significant Impact with Mitigation*)**

***WSP Gen-Tie Corridors*. Strong ground shaking expected within the WSP Gen-Tie Corridors during a moderate to severe earthquake could potentially result in damage to transmission towers and lines. (*Less-than-Significant Impact with Mitigation*)**

This impact analysis addresses significance criterion 'a-ii' above.

Westlands Solar Park

Large or moderate earthquakes centered on faults in the Coast Ranges to the west would result in ground shaking that could cause damage to structures in the WSP plan area. The greatest potential damage to the site would result from an earthquake centered on a nearby segment of the San Andreas System, the Great Valley Fault System, or the Nunez fault, all of which are located within 27 miles of the WSP plan area. A major earthquake centered on a nearby fault would result in moderate ground shaking with peak horizontal ground accelerations of 0.25-0.30g within the WSP plan area during the life of the solar generating projects.

Ground shaking would cause dynamic loading resulting in stress to buildings and structures. However, structures designed and built in accordance with the California Building Code (which is incorporated into the Kings County Building Code) are expected to respond well. The CBC provisions applicable to solar development within the WSP provide for high degree of seismic strength and resistance to lateral forces (strong shaking) in construction in order to minimize risks to public safety and damage to property, corresponding to the magnitude of the seismic events expected in the region.

Moderate ground shaking expected within the WSP plan area during a moderate to severe earthquake could potentially result in damage to solar generating facilities and other structures, which represents a *potentially significant impact*. With implementation of Mitigation Measure GEO-1a below, the impact would be reduced to *less than significant*.

WSP Gen-Tie Corridors

The gen-tie lines would be subject to potential damage from an earthquake centered on the San Andreas or Nunez faults, or the Great Valley Fault System. The severity of shaking would be variable, with the severity of potential ground shaking decreasing with distance east from the Coastal Ranges. The WSP gen-tie corridors would be subject to peak ground accelerations of 0.25 to 0.40g, depending on location.

Moderate ground shaking expected within the WSP Gen-Tie Corridors during a moderate to severe earthquake could potentially result in damage to transmission towers and lines, which represents a *potentially significant impact*. With implementation of Mitigation Measure GEO-1b below, the impact would be reduced to *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. Implement MM GEO-1a.**

***WSP Gen-Tie Corridors*. Implement MM GEO-1b.**

MM GEO-1a. **Minimization of Seismic Ground Shaking Hazard within WSP. Prior to the issuance of building permits for solar projects within the WSP plan area, the project applicants for each solar project shall provide documentation to Kings County demonstrating that all project structures are designed in accordance with the seismic design criteria of the California Building Code. The project applicants shall also implement all recommendations contained in the project-specific geotechnical engineering reports with respect to grading, soil preparation, building and equipment foundation design, solar array support specifications, pavement design, excavations, and other construction considerations.**

For each solar project within the WSP plan area, a geotechnical investigation will be conducted prior to engineering design for the project to determine the detailed soil characteristics of the site. This will provide the basis for engineering recommendations and specifications regarding soil preparation, foundation design, solar array support specifications, pavement design, excavations, and other

construction considerations to be followed during site development. The geotechnical report for each SGF project will be reviewed and approved by Kings County prior to issuance of building permits.

MM GEO-1b. **Minimization of Seismic Ground Shaking Hazard for WSP Gen-Tie Projects. Prior to final project design for the transmission lines and related facilities, geotechnical investigations shall be performed to evaluate ground accelerations for design of all planned transmission structures to ensure conformance with applicable design standards for the anticipated seismic forces.**

Based on design parameters established by the geotechnical investigations, the structural elements of the transmission line system can then be designed to resist or accommodate location-specific ground motions and conform to the current seismic design standards.

Impact GEO-3. Liquefaction, Lateral Spreading, and Seismic Settlement

***Westlands Solar Park*. There is a potential for seismically-induced, liquefaction, lateral spreading, and settlement within the WSP plan area which could result in damage to foundations and structures. (*Less-than-Significant Impact with Mitigation*)**

***WSP Gen-Tie Corridors*. There is a potential for seismically-induced, liquefaction, lateral spreading, and settlement within portions of the WSP Gen-Tie Corridors which could result in damage to foundations and structures. (*Less-than-Significant Impact with Mitigation*)**

This impact analysis addresses significance criterion 'a-iii' above.

Westlands Solar Park

Liquefaction

Liquefaction would typically pose a hazard where liquefaction-prone conditions are present, such as combination of loose granular soils and shallow groundwater. Within the WSP plan area, most soil series have high clay content, indicating a low susceptibility to liquefaction. Although perched groundwater conditions occur within the WSP plan area, these areas are typically associated with stiff clay soils. However, there may be localized instances where liquefaction-prone conditions are present. In the extreme western portion of the WSP plan area, near Nevada Avenue and Avenal Cutoff Road, there is an area of approximately 1,080 acres that consists of loam soils. The nearest groundwater in this area was recently (April 2015) mapped at 20-25 feet below the surface; however, during some years (e.g., 2003) groundwater in this area has been mapped at 5-10 feet below ground surface (WWD 2015, 2003). This indicates a potential for liquefaction in this area when shallow groundwater is near the ground surface. (However, given the installation of drip irrigation systems over most of these lands in the past decade, these high groundwater conditions are not expected to recur in the future.)

In summary, while soil and groundwater conditions over most of the WSP plan area are not generally conducive to liquefaction, there may be localized areas within the clayey soils where less cohesive soils exist with high groundwater conditions, indicating a potential susceptibility to liquefaction in those areas. Also, the loam soils in the western portion of the WSP plan area are potentially susceptible to liquefaction when groundwater levels are high. Therefore, the potential liquefaction hazard in the WSP plan area represents a *potentially significant impact*. With implementation of Mitigation Measure GEO-2a below, the impact would be reduced to *less than significant*.

Lateral Spreading

Lateral spreading can occur with seismic ground shaking on slopes where saturated soils liquefy and flow toward the open slope face. There is a generally low potential for lateral spreading within the WSP plan area since it is essentially flat and does not include significant slopes. However, there is some potential for lateral spreading along the open channels of the canals and ditches that would be retained and within the WSP plan area. Therefore, the potential for lateral spreading within the WSP plan area represents a *potentially significant impact*. With implementation of Mitigation Measure GEO-2a below, the impact would be reduced to *less than significant*.

Seismic Settlement

Seismic settlement may occur as saturated and unsaturated granular soils become rearranged during groundshaking resulting in a volume reduction and surface deformation. The magnitude of seismic settlement is a function of the relative density of the soil and the magnitude of cyclic shear stress caused by seismic ground motion. The potential for the occurrence of an earthquake with the capability of promoting seismic settlement at the project is generally low within the WSP plan area where stiff clay soils comprise the most common soil types. It is anticipated that some seismic settlement could occur in isolated locations where unconsolidated soils are present above the groundwater table. While the probability of seismic settlement within the WSP plan area is low, localized conditions for seismic settlement may be present, and this hazard would represent a *potentially significant impact*. With implementation of Mitigation Measure GEO-2a below, the impact would be reduced to *less than significant*.

It is noted that the phenomenon of seismic settlement is sometimes referred to as "subsidence," although subsidence is more typically considered to be the result of groundwater overpumping and consequent soil compression. Subsidence of this type is a regional occurrence and would not be expected to adversely affect solar developments within the WSP. (See "Environmental Setting" above for a brief description of subsidence.)

WSP Gen-Tie Corridors

Liquefaction

The WSP gen-tie corridors generally pass through areas of alluvial sandy loam soils that are well drained and do not have groundwater levels near the ground surface, and therefore have a low susceptibility to liquefaction. However, there may be localized instances where liquefaction potential may be greater, such as along stream beds and other water bodies, where conditions may include saturated soil conditions and

unconsolidated sediments. Therefore, the potential for localized liquefaction hazard within the gen-tie corridors represents a *potentially significant impact*. With implementation of Mitigation Measure GEO-2b below, the impact would be reduced to *less than significant*.

In the interior areas of the valley, such as at the easterly sections of the gen-tie corridors, soil conditions may include areas of stiff clays, which are generally not susceptible to liquefaction even with high groundwater conditions. However, there may be localized instances where liquefaction-prone conditions are present. Therefore, the potential liquefaction hazard within the gen-tie corridors represents a *potentially significant impact*. With implementation of Mitigation Measure GEO-2b below, the impact would be reduced to *less than significant*.

Lateral Spreading

The potential for lateral spreading is correlated with liquefaction susceptibility, so there may be localized potential for lateral spreading on loam soils with high groundwater conditions. Within the gen-tie corridors, the potential for lateral spreading would be generally low and confined to levee banks and open faces of canal channels and ditches. Thus, while the potential hazard due to lateral spreading would be localized, it would represent a *potentially significant impact*. With implementation of Mitigation Measure GEO-2b below, the impact would be reduced to *less than significant*.

Seismic Settlement

Along the gen-tie corridors, the potential for seismic settlement could occur in isolated locations where unconsolidated soils are present. The presence of sandy loam soils along portions of the gen-tie corridors indicates that localized conditions for seismic settlement may be present, and this hazard would represent a *potentially significant impact*. With implementation of Mitigation Measure GEO-2b below, the impact would be reduced to *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. Implement MM GEO-2a.**

***WSP Gen-Tie Corridors*. Implement MM GEO-2b.**

MM GEO-2a. **Minimization of Ground Failure Hazard within WSP. Prior to the issuance of the first building permit for each solar project within WSP, the applicant shall retain a qualified geotechnical engineer to undertake a soils investigation to determine the potential for liquefaction, lateral spreading, and seismic settlement within the project area and to prepare recommendations and foundation design specifications to mitigate potential damage to project structures due to these soil hazards. Any mitigation identified in the geotechnical reports shall be subject to review and approval by the Kings County Building Official and made conditions of building permit approval.**

Measures to minimize potential damage resulting from these ground failure hazards may include removal of soils from below the bottom of footings and replacement of

the soils with engineered fill, surcharging to induce settlement before construction, or supporting posts and piles in dense soil or bedrock below the liquefiable zone. The recommendations of the geotechnical engineer will be implemented as required by Kings County.

MM GEO-2b. **Minimization of Ground Failure Hazards for WSP Gen-Tie Corridors. Prior to final project design for the gen-tie lines and related facilities, the project proponent shall retain a qualified geotechnical engineer to undertake a soils investigation to determine the potential for liquefaction, lateral spreading, and seismic settlement within the gen-tie corridors and to prepare recommendations and foundation design specifications to mitigate potential damage to project structures due to these soil hazards.**

Typical construction techniques for addressing liquefaction include: removal of liquefiable layers and replacement with compacted fill, or support of structures with piles at depths designed specifically for liquefaction, deep dynamic compaction, and other methods.

In locations where the transmission lines would irrigation channels or ditches, foundations for towers and other structures should be located to avoid potential areas of liquefaction and lateral spreading, such as by moving tower locations away from the channel.

Impact GEO-4. Landslides and Slope Failures

***Westlands Solar Park*. The level terrain of the WSP plan area has a very low potential for landslides, although there is a moderate potential for localized slope failures along the channels and levees of irrigation canals, ditches, and ponds. (*Less-than-Significant Impact with Mitigation*)**

***WSP Gen-Tie Corridors*. The relatively level terrain of the gen-tie corridors has a very low potential for landslides, although there is a moderate potential for localized slope failures along the channels and levees of irrigation canals, ditches, and ponds. (*Less-than-Significant Impact with Mitigation*)**

This impact analysis addresses significance criterion 'a-iv' above.

Westlands Solar Park

The nearly level terrain of WSP plan area has a very low potential for landslides although there is a moderate potential for localized slope failures along the channels and levees of irrigation canals, ditches, and ponds. Although the potential hazard to structures from potential slope failures within the WSP plan area is small, it represents a *potentially significant impact*. With implementation of Mitigation Measure GEO-3a below, the impact would be reduced to *less than significant*.

WSP Gen-Tie Corridors

The nearly level terrain of the gen-tie corridors has a very low potential for landslides, although there is a moderate potential for localized slope failures along the channels and levees of irrigation canals, ditches, and ponds. Although the potential hazard to structures from potential slope failures within the WSP Gen-Tie Corridors is small, it represents a *potentially significant impact*. With implementation of Mitigation Measure GEO-3b below, the impact would be reduced to *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. Implement MM GEO-3a.**

***WSP Gen-Tie Corridors*. Implement MM GEO-3b.**

MM GEO-3a. **Minimization of Landslide and Slope Failure Hazard within WSP. Prior to the issuance of the first building permit for each solar project within WSP, the applicant shall retain a qualified geotechnical engineer to undertake a soils investigation to determine the potential for slope failures and to prepare recommendations to mitigate or avoid potential damage to project structures due to potential slope failures. Any mitigation identified in the geotechnical report shall be subject to review and approval by the County Building Official and made conditions of building permit approval.**

The potential for slope failures can be addressed through soil compaction or other grading techniques, as recommended by the project geotechnical engineer. The recommendations of the geotechnical engineer will be implemented as required by Kings County.

MM GEO-3b. **Minimization of Landslide and Slope Failure Hazard for WSP Gen-Tie Corridors. Prior to final project design for the gen-tie lines and related facilities, the project proponent shall retain a qualified geotechnical engineer to undertake a soils investigation to determine the potential for landslides and/or slope failures within the gen-tie corridors and to prepare recommendations to mitigate or avoid potential damage to project structures due to potential slope failures.**

Impact GEO-5. Expansive Soils

***Westlands Solar Park*. Most soil units within the WSP plan area have moderate to high potential for soils expansion which could result in potential damage to foundations and equipment pads. (*Less-than-Significant Impact with Mitigation*)**

***WSP Gen-Tie Corridors*. Most soil units within the gen-tie corridors consist of sandy loam soils which have a low to moderate potential for soils expansion. The clay loam soils at the eastern end of the northern gen-tie corridor have a moderate to high potential for soils expansion. Areas with moderate to high potential for soils expansion could result in potential damage to foundations and equipment pads. (*Less-than-Significant Impact with Mitigation*)**

This impact analysis addresses significance criterion 'd' above.

Westlands Solar Park

The near surface soils throughout the majority of the WSP plan area have a high potential for soils expansion. These soils have high clay content and are subject to shrinking and swelling during seasonal wetting and drying cycles. Where structures are constructed over expansive clays, moisture can increase below the structure over time, resulting in swell pressures on foundations and concrete slabs which can in turn result in cracking of these structures. The potential hazard to structures from expansive soil conditions represents a *potentially significant impact*. With implementation of Mitigation Measure GEO-4a below, the impact would be reduced to *less than significant*.

WSP Gen-Tie Corridors

The soils of the Valley segments of the transmission corridors consist primarily of well-drained loams formed on alluvial fans. While clay content is generally low for most of the corridor lengths, there is an area of soils with higher clay content at the eastern end of the northern gen-tie corridor, which may be susceptible to expansion. Therefore, the potential hazard to structures from expansive soil conditions represents a *potentially significant impact*. With implementation of Mitigation Measure GEO-4b below, the impact would be reduced to *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. Implement MM GEO-4a.**

***WSP Gen-Tie Corridors*. Implement MM GEO-4b.**

MM GEO-4a. **Minimization of Soils Expansion Hazard within WSP. Prior to the issuance of the first building permit for each solar project within WSP, the applicant shall retain a qualified geotechnical engineer to undertake a soils investigation to determine the potential for soils expansion and to prepare recommendations and foundation design specifications to mitigate potential damage to project structures due to potential soils expansion. Any mitigations identified the geotechnical report shall be subject to review and approval by the County Building Official and made conditions of building permit approval.**

All solar projects within WSP will be subject to project-specific geotechnical investigations prior to the submittal of permit applications. These subsurface studies

will involve detailed evaluations of on-site soils conditions and provide construction level- recommendations as to the most appropriate form of special foundation design, based on the nature and extent of expansive soils beneath the planned building foundations and concrete pads. The potential damage from soils expansion would be reduced by several alternative engineering measures (e.g., overexcavation and replacement with non-expansive soils; extending foundations below the zone of shrink and swell; chemically treating the soils with quicklime or cement), as recommended by the project geotechnical engineer. The recommendations of the geotechnical engineer will be implemented as required by Kings County.

MM GEO-4b. **Minimization of Soils Expansion Hazard for WSP Gen-Tie Corridors. Prior to final project design for the gen-tie lines and related facilities, the project proponent shall retain a qualified geotechnical engineer to undertake a soils investigation to determine the potential for soils expansion within the gen-tie corridors and to prepare recommendations and foundation design specifications to mitigate potential damage to project structures due to soils expansion.**

Impact GEO-6. Erosion Potential

***Westlands Solar Park*. The development of the WSP plan area would create the potential for water- and wind-related soil erosion during construction and decommissioning of the WSP solar generating facilities. (*Less-than-Significant Impact with Mitigation*)**

***WSP Gen-Tie Corridors*. The construction of the gen-tie projects would create the potential for water- and wind-related soil erosion during construction of the gen-tie facilities. (*Less-than-Significant Impact with Mitigation*)**

This impact analysis addresses significance criterion 'b' above.

Westlands Solar Park

The development of the WSP solar facilities would involve site clearing, rough grading, soil compaction, establishment of temporary construction staging areas, excavation of temporary water supply basins, and trenching for solar arrays, and construction of support facilities and internal access driveways. Once vegetation is removed, the exposed and disturbed soil would be susceptible to erosion from wind and rain. During decommissioning of the solar facilities, the soil would again be exposed and susceptible to erosion. The potential for erosion and sedimentation during construction and decommissioning represents a *potentially significant impact*. With the implementation of Mitigation Measure HYD-1, the impact would be reduced to *less-than-significant*.

Erosion potential during operation of the WSP solar facilities would be negligible. Approximately 99 percent of the ground surface within each solar facility would not be covered with impervious materials,

and would be revegetated. The general absence of exposed soils during operations, and the virtually flat topography would not be conducive to erosion. Almost all rainwater would percolate into the ground within a short period, and the relatively minor volumes of runoff that could be generated during more intense storm events would be retained within each SGF site. Therefore, the very low potential for erosion impacts to occur during the operational phase of the solar facilities would represent a *less-than-significant impact.*

WSP Gen-Tie Corridors

The gen-tie projects would involve clearing and grading of tower sites and temporary access driveways, and establishment of temporary construction staging areas. Once vegetation is removed, the exposed and disturbed soil would be susceptible to erosion from wind and rain. The gen-tie corridors pass through virtually flat terrain with soils varying from clayey soils in the east to looser soils on the alluvial fan deposits in the west. The clay soils have generally low natural erosion potential while the looser alluvial fan soils have a somewhat greater erosion potential. The seasonal high wind conditions throughout the gen-tie corridor vicinity would contribute to a high potential for wind erosion in areas of exposed soils. The potential for wind and water erosion during grading and construction for the gen-tie facilities represents a *potentially significant impact*. With the implementation of Mitigation Measure HYD-1, the impact would be reduced to *less-than-significant*.

During operation of the gen-tie lines, the tower pads would be subject to erosion from stormwater runoff. While the alluvial fan soils along most of the length of the gen-tie corridors are somewhat erodible, the virtually flat terrain would minimize the potential for concentrated runoff conditions. Revegetation of the tower sites would further reduce soil exposure to wind and water erosion. Therefore, the low potential for erosion during operation of the gen-tie lines represents a *less-than-significant impact*.

Mitigation Measures:

***Westlands Solar Park*. Implement MM HYD-1 (prepare and implement SWPPPs).**

***WSP Gen-Tie Corridors*. Implement MM HYD-1 (prepare and implement SWPPPs).**

As discussed in Section *3.8. Hydrology and Water Quality*, under subsection *3.8.2. Regulatory Setting*, the solar projects developed within the WSP will be subject to the U.S. EPA's National Pollutant Discharge Elimination System (NPDES) permit requirements for construction activities. These are implemented at the state level through the General Permit for Discharges of Storm Water Associated with Construction Activity, as administered by the State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Board (RWQCB). Prior to construction grading and prior to the decommissioning, the project proponents will be required to file a "Notice of Intent" (NOI) with the SWRCB to comply with the General Permit and prepare a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP for each project phase will be prepared by a licensed engineer and will detail the treatment measures and best management practices (BMPs) to control pollutants that shall be implemented and complied with during the construction and post-construction phases of solar development. The SWPPP(s) required for decommissioning shall specify BMPs to be implemented during

that final project phase. Typical BMPs that may be specified in the SWPPPs include: scheduling construction activities around forecasted rain events; designation of restricted-entry zones; sediment tracking control measures (e.g., crushed stone or riffle metal plate at construction entrances); protective measures for sensitive areas; and provision for revegetation upon completion of construction within a given area. All project SWPPPs would be subject to approval by the Central Valley Regional Water Quality Control Board (CVRWQCB), which would make the final determinations on which BMPs are required for each project. The construction contracts for each construction phase, and for the decommissioning phase, would include the requirement to implement the BMPs in accordance with the SWPPPs. The SWPPPs would identify the responsible entities for both the construction and post-construction periods. The SWPPPs are to be kept on-site during construction, where they would be subject to inspection by Kings County and CVRWQCB staff. The SWPPPs are to be updated each year for each solar project while construction is ongoing.

The gen-tie projects would be subject to the same NPDES requirements for preparation and implementation of SWPPPs, as discussed above for the WSP plan area. Typical BMPs would be the same or similar to those described above for the Westlands Solar Park.

Impact GEO-7. Shallow Groundwater

***Westlands Solar Park*. Shallow groundwater conditions within the WSP plan area could adversely affect below-ground electrical conduits. (*Less-than-Significant Impact with Mitigation*)**

***WSP Gen-Tie Corridors*. Localized shallow groundwater conditions may occur within the WSP gen-tie corridors; however, since the transmission facilities would not include below-ground elements apart from concrete tower footings, there would be no adverse effect upon the gen-tie facilities. (*Less-than-Significant Impact*)**

Westlands Solar Park

Most of the WSP plan area is subject to perched groundwater conditions. After wet rainy seasons, groundwater levels can be as shallow as five feet below the ground surface in some areas of the WSP plan area (WWD 2001). Excessive subsurface moisture could adversely affect buried electrical cables. However, cable trenches would be typically three feet deep, with electrical conduit laid on a layer of crushed rock approximately one foot thick. Thus the potential for groundwater levels to rise to the level of the buried electrical conduit would be small and limited to isolated situations, if any. Also, with the cessation of agricultural irrigation within each SGF site as it is developed, it is anticipated that any localized high groundwater conditions would recede below the near-surface zone. The solar projects would not include underground utilities such as sewer, water, or natural gas lines. Although the potential for groundwater rising to the planned depth of buried utilities is small, the potential hazard from shallow groundwater conditions within the WSP plan area represents a *potentially significant impact*. With the implementation of Mitigation Measure GEO-5 below, the impact would be reduced to *less-than-significant*.

WSP Gen-Tie Corridors

The gen-tie corridors include some areas of high groundwater, particularly in the eastern segments of the corridors. The shallow groundwater conditions occur only in the areas located east of the California Aqueduct, where most groundwater depths are 10 feet or less, with a few isolated locations where depths are 5 feet or less. It is not expected that the gen-tie lines would include buried electrical cable or other underground elements. Therefore, the hazard posed by localized shallow groundwater conditions within the WSP Gen-Tie Corridors would represent a *less-than-significant impact*.

Mitigation Measures:

***Westlands Solar Park*. Implement MM GEO-5.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

MM GEO-5. **Shallow Groundwater Protection within WSP. Prior to the issuance of the first building permit for each solar development within WSP, the applicant shall retain a qualified geotechnical engineer to undertake a soils investigation to determine the potential for adverse groundwater impacts to buried electrical conduit and to prepare recommendations and design specifications to avoid potential damage from groundwater. Any mitigations identified in the geotechnical report shall be subject to review and approval by the County Building Official and made conditions of building permit approval.**

Measures to minimize potential groundwater damage to buried conduit may include waterproofing the electrical trenches and conduits, per applicable standards, as recommended by the project geotechnical engineer.

Impact GEO-8. Soil Corrosivity

***Westlands Solar Park*. Corrosive soils within the WSP plan area could potentially cause damage to on-site structures, foundations, and utilities. (*Less-than-Significant Impact with Mitigation*)**

***WSP Gen-Tie Corridors*. Corrosive soils within the WSP gen-tie corridors could potentially cause damage to on-site structures and foundations. (*Less-than-Significant Impact with Mitigation*)**

Westlands Solar Park

All of the soil units within the WSP plan area have a high potential corrosivity to uncoated steel, and moderate to high potential corrosivity to concrete (NRCS 1986). Unless buried steel and concrete elements are properly treated, the site soil conditions could cause damage to such buried structures under moist environments. This is a *potentially significant impact*. With the implementation of Mitigation Measure GEO-6a below, the impact would be reduced to *less-than-significant*.

WSP Gen-Tie Corridors

The soil units within the WSP gen-tie corridors have a high potential corrosivity to uncoated steel, and low to high potential corrosivity to concrete (NRCS 2006). Unless buried steel and concrete elements are properly treated, the soil conditions could cause damage to such buried structures under moist environments. This is a *potentially significant impact*. With the implementation of Mitigation Measure GEO-6b below, the impact would be reduced to *less-than-significant*.

Mitigation Measures:

***Westlands Solar Park*. Implement MM GEO-6a.**

***WSP Gen-Tie Corridors*. Implement MM GEO-6b.**

MM GEO-6a. **Corrosion Protection for Buried Structures within WSP. Prior to the issuance of the first building permit for each solar development within WSP, the applicant shall retain a qualified geotechnical engineer to undertake a soils investigation to determine the potential for soil corrosivity and to prepare recommendations and design specifications to mitigate potential damage to underground project elements due to potentially corrosive soils. Any mitigation identified in the geotechnical report shall be subject to review and approval by the County Building Official and included as conditions of building permit approval.**

All solar projects within WSP will be subject to project-specific geotechnical investigations prior to the submittal of permit applications. These subsurface studies will involve detailed evaluations of corrosivity characteristics of on-site soils and provide construction-level recommendations as to the most appropriate method of protecting subsurface structures from soil corrosion. Measures to minimize potential damage to underground steel and concrete structures due to corrosive soils may include the use of corrosion resistant materials, coatings, and cathodic protection for buried steel, and selection of the appropriate type of cement and water/cement ratio, as recommended by the project geotechnical engineer. The recommendations of the geotechnical engineer will be implemented as required by Kings County.

MM GEO-6b. **Corrosion Protection for Buried Structures within WSP Gen-Tie Corridors. Prior to final project design for the gen-tie lines and related facilities, the project proponent shall retain a qualified geotechnical engineer to undertake a soils investigation to determine the potential for soil corrosivity and to prepare recommendations and design specifications to mitigate potential damage to underground project elements due to potentially corrosive soils.**

Impact GEO-9. Soil Suitability for Wastewater Disposal

***Westlands Solar Park*. The operational domestic wastewater disposal requirements for each WSP solar facility would be provided either by septic tanks with no leachfields (wastewater would be disposed off-site), or portable chemical toilets, depending on the size of the solar facility, and by portable chemical toilets during construction. Therefore, on-site soils would not be utilized for wastewater disposal. (*No Impact*)**

***WSP Gen-Tie Corridors*. During construction, wastewater disposal requirements would be provided by portable chemical toilets. There would be no need for wastewater disposal during gen-tie line operation. Therefore, on-site soils would not be utilized for wastewater disposal. (*No Impact*)**

This impact analysis addresses significance criterion 'e' above.

Westlands Solar Park

None of the WSP solar facilities are anticipated to use a septic leachfields for on-site wastewater disposal. The WSP solar facilities will have no operations staff stationed at the facilities. Operations workers who visit the sites periodically for inspection, maintenance, repair, and panel washing duties would arrive from off-site locations. For larger SGFs, it is expected that domestic wastewater disposal would be provided a septic tank located within the O&M yard at each SGF. The tanks would have a capacity of approximately 2,000 gallons and would be emptied as needed by a contracted wastewater service vehicle which would haul the wastewater to an approved wastewater treatment facility in the region. For smaller solar facilities, the sanitary needs of workers visiting the solar facilities for maintenance activities may be provided by portable chemical toilets that would be serviced by a private contractor. Construction workers would also utilize portable chemical toilets. Therefore, no WSP solar facility would connect to the sanitary sewer system or utilize on-site septic disposal systems for disposal of wastewater. Thus, although the WSP plan area is located in an area with a perched water table, and engineering would be required by Kings County for any new septic disposal system that is installed; no such systems are expected to be required or proposed for any WSP solar facility. Therefore, WSP solar development would result in *no impact* in terms of capability of the site soils to adequately support septic systems.

WSP Gen-Tie Corridors

During construction of the gen-tie projects, it is expected that portable toilet facilities would provide wastewater service for construction workers. No permanent employees would be present upon completion of the gen-tie lines, so permanent wastewater facilities would not be required once the gen-tie lines are completed. Since there would be no discharge of treated wastewater associated with the construction or operation of the gen-tie lines, there would be a *no impact* to soil and groundwater.

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

Impact GEO-10. Mineral Resources

***Westlands Solar Park*. The construction of the WSP solar facilities would increase the demand for local sand and gravel resources. This increased demand would represent a small portion of the aggregate resources in the area and would not result in a loss of availability of a known mineral resource. While an abandoned oil field is located near the WSP plan area, WSP solar development would not interfere with access to known mineral or oil and gas resources. Therefore, WSP solar development would not result in the loss of availability of an important mineral resource recovery site. (*Less-than-Significant Impact*)**

***WSP Gen-Tie Corridors*. The construction of the gen-tie projects would increase the demand for local sand and gravel resources. This increased demand would represent a small portion of the aggregate resources in the area and would not result in a loss of availability of a known mineral resource. While an abandoned oil field and several abandoned oil wells are located near the gen-tie corridors, the construction of the WSP gen-tie projects would not interfere with access to known mineral or oil and gas resources. No portion of the WSP gen-tie corridors is located in proximity to locally-important recovery sites for mineral resources, or oil and gas resources, and therefore would not result in the loss of availability of an important mineral resource recovery site. (*Less-than-Significant Impact*)**

This impact analysis addresses significance criteria 'f' and 'g' above.

Westlands Solar Park

The WSP solar generating facilities will require sand and gravel for the construction of maintenance driveways, for fill material for utility trenches, as base material for building and equipment pads, and in concrete mix. The total aggregate requirements of the WSP solar facilities would be relatively small and would not represent a significant portion of the available aggregate resources and would not result in a

loss of availability of known mineral resources to the region or State. Therefore, the impact to availability of aggregate resources would represent a *less-than-significant impact*.

As discussed in Section *3.6.1 Environmental Setting*, the WSP plan area is not located in proximity to any known aggregate resource areas or other mineral resource areas. Therefore, the solar development of the WSP plan area would not interfere with access to known aggregate resources, and the impact to access to mineral resources would be *less than significant*.

There are a number of active and abandoned oil and gas fields in Kings County and western Fresno County. Within the WSP plan area, there are 9 abandoned oil wells associated with the abandoned Westhaven oil field. All of the former oil wells within the WSP plan area have been plugged and abandoned. (There is one oil and gas well [Mary Bellochi #1] located on the north side of Nevada Avenue, just outside the WSP plan area (south of the tailwater pond) which is mapped as "idle" (DOGGR 2017). While there is always the possibility that oil and gas extraction within the WSP plan area could become feasible under future economic conditions and new technologies, the Westlands Solar Park would include open areas within and around the solar generating facilities that would be accessible to mineral rights holders if drilling on within the WSP plan area were to become economically feasible in the future. Therefore, the solar development of the WSP plan area would not interfere with access to oil and gas resources, and the impact to access to oil and gas resources within the WSP plan area would be *less than significant*.

In summary, the WSP solar development would not result in the loss of availability of a known mineral resource, or in the loss of availability of an important mineral resource recovery site. Therefore, the impact of WSP solar development upon mineral resources would be *less than significant*.

WSP Gen-Tie Corridors

The gen-tie projects will require sand and gravel primarily for concrete mix for the tower footings. The total aggregate requirements of the gen-tie projects would be relatively small and would not represent a significant portion of the available aggregate resources and would not result in a loss of availability of known mineral resources to the region or State. Therefore, the impact to availability of aggregate resources would be *less than significant*.

As discussed in Section *3.6.1 Environmental Setting*, the WSP gen-tie corridors are not located in proximity to any known aggregate resource areas or other mineral resource areas. Therefore, the construction of the gen-tie lines would not interfere with access to known aggregate resources, and the impact to access to mineral resources would be *less than significant*.

With respect to oil and gas resources, there are a number of abandoned and plugged oil and gas wells associated with several small abandoned oil and gas fields in western Fresno County in the vicinity of WSP gen-tie corridors. However, with one exception there are no active or inactive oil or gas wells in proximity to the transmission corridors. (The one exception is "Mary Bellochi #1" located north of Nevada Avenue outside the WSP-South to Gates Gen-Tie corridor, which is mapped as "idle" by DOGGR.) Given the narrow linear character of the gen-tie corridors, the construction of the gen-tie lines would not interfere with access to any underlying oil and gas resources, and the impact to access to oil and gas resources along the gen-tie corridors would be *less than significant*.

In summary, the construction of the WSP gen-tie projects would not result in the loss of availability of a known mineral resource, or in the loss of availability of an important mineral resource recovery site. Therefore, the impact of the WSP gen-tie projects upon mineral resources would be *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

Cumulative Impacts

Impact GEO-11. Cumulative Geology and Soils Impacts

***Westlands Solar Park*. The potential cumulative geology and soils impacts resulting from WSP solar development, combined with impacts from related cumulative projects, would be less than cumulatively significant under near-term and far-term conditions, with mitigation. (*Less-than-Significant Cumulative Impact with Mitigation*)**

***WSP Gen-Tie Corridors*. The potential cumulative geology and soils impacts resulting from the WSP gen-tie projects, combined with impacts from related cumulative projects, would be less than cumulatively significant under near-term and far-term conditions with mitigation. (*Less-than-Significant Cumulative Impact with Mitigation*)**

Geographic Scope of Cumulative Impact Analysis

Geologic and soils impacts relate to physical site conditions which may have an impact on a proposed project, instead of the project having an impact on its setting. Therefore, these impacts tend to be highly localized and generally do not extend beyond individual project boundaries (except perhaps in cases where an older building that is not designed to modern seismic standards may collapse into a neighboring property and the like). In addition, the potential geology and soils impacts associated with the WSP solar development, as well as the potential geology and soils impacts associated with other cumulative projects, would be mitigated on a site-specific basis for each project in accordance with local building standards and regulations, and pursuant to the recommendations of soils and geotechnical engineers for each project, as required by Kings County and Fresno County. Thus the geologic and soils conditions affecting individual projects in the same general vicinity would not accumulate to result in a greater level of geologic and soils impact. Given the relatively flat terrain of the site vicinity, and the absence of large-scale geologic hazards, such as large deep-seated landslides, or potential mud slides or debris flows that would extend beyond project boundaries, it is highly unlikely that geologic and soils impacts would extend beyond the WSP plan area. Therefore, the geographic scope for the cumulative analysis of geologic and soils impacts is conservatively defined to extend no more than ¼ mile beyond the boundaries of the WSP plan area. Lands

located at greater distances have no potential to contribute to cumulatively significant geology and soils impacts in combination with the less-than-significant geology and soils impacts associated with the WSP solar developments.

Regarding the WSP gen-tie corridors, the physical footprint of the gen-tie projects would be very small, during both construction and operation, so the area subject to potential geologic and soils impacts from the gen-tie projects is limited. Therefore, the geographic scope of the cumulative analysis for the gen-tie projects extends to lands adjacent to the gen-tie corridors, and includes the cumulative projects on those adjacent lands.

Westlands Solar Park

Near-Term

Under near-term conditions, there are four pending, approved, and completed projects (or groups of projects) within a ¼ mile radius of the WSP's outside boundaries. All four of these projects comprise solar PV developments. (Note: The Westside Solar project and Westlands Aquamarine solar project, shown in Figure PD-9, are located within the WSP plan area. Since the impacts associated with these projects are addressed in the WSP impact analysis, they are not included again in the list of cumulative projects below.) These solar projects are listed below and described in Section *2.5. Completed, Approved and Pending Projects/ Introduction to Cumulative Impact Analysis*. Their locations are shown in Figure PD-9.

- Mustang/Orion/Kent South
- American Kings
- Mustang 2
- Kettleman

Similar to the conditions within the WSP plan area, the other four cumulative project sites are characterized by flat terrain without hillsides or other topographic or geologic features. The dominant soil type on the three northerly cumulative sites is Lethant clay, which also covers the majority of the WSP plan area, and the primary soil type on the Kettleman site is Houser clay. Both soil types are characterized by perched groundwater conditions. Thus all four cumulative sites and the WSP plan area are subject to poor drainage and high groundwater conditions. Given that geologic and soils conditions are across the neighboring cumulative sites are very similar to those within the WSP plan area, development of the cumulative projects is expected to be subject to similar geologic and soils hazards as identified for the WSP plan area. Thus each cumulative site would be subject similar levels of hazard due to for seismic shaking, liquefaction, seismic settlement, localized slope failures, soils expansion, shallow groundwater conditions, soil corrosivity, and soil erosion, although the nature and severity of some of these hazards would be highly localized depending on location-specific soil conditions (i.e., the potential presence of liquefiable soil lenses would vary from site to site).

The vulnerability of each cumulative project to most seismic and soil hazards would be subject to confirmation and detailed characterization through the completion of geotechnical investigations required prior to the development of each site. As with the WSP solar development, it is expected that the potential seismic and geologic hazards and any adverse soil conditions at the cumulative project sites would be mitigated through building code requirements and design recommendations of geotechnical engineers for each project, as required by Kings County. For the WSP solar development

these measures are specified in MMs GEO-1a through GEO-4a, GEO-5, GEO-6a, and MM HYD-1. The specified soil engineering measures would be expected to fully mitigate or avoid all potentially hazardous geologic and soils conditions noted above for the WSP plan area and would also be required for the cumulative project sites. While constructing the facilities to meet the seismic design criteria of the California Building Code would not completely eliminate the potential for building damage during a major earthquake, it would reduce the potential impacts to public safety and property to less-than-significant levels at both the WSP and the cumulative projects. Therefore, the near-term cumulative geologic and soils impacts associated with WSP solar development would be *less than significant with mitigation*.

Far Term

For far-term conditions, the analysis of cumulative geology and soils impacts considers the full buildout of land uses within Kings County adjacent to and near the WSP plan area (generally includes development within ¼ mile from the WSP boundary), as shown on the Kings County 2035 General Plan. The 'Kings County Land Use Map' of the Land Use Element shows that all lands within ¼ mile of the WSP boundaries are designated as either 'General Agriculture 20 ac.' or 'Exclusive Agriculture 40 ac.' Thus it is reasonable to assume that agricultural production will remain the dominant land use on the adjacent and surrounding lands for the life of the General Plan.

It is important to note that, as is the case with the lands within the WSP plan area, the agricultural designations of the Kings County 2035 General Plan allow the installation of utility-scale PV solar generating facilities (Kings County 2010a). Thus it is possible that additional solar development projects could be proposed in the WSP vicinity within the remaining 20-year planning horizon of the General Plan. Since the adjacent lands to the west of the WSP site are located within Fresno County, the corresponding General Plan designations for Fresno County lands would guide permitted uses on adjacent lands to the west. All lands within ¼ mile of the WSP plan area to the west are designated 'Agriculture' under the Fresno County General Plan (FC 2010). While the Fresno County General Plan does not specifically allow PV solar development on agriculturally-designated lands, the County has established a process for considering solar PV development on agriculturally-designated lands, and has approved a number of solar PV projects under this process (Fresno County 2013). Therefore, it is reasonable to assume that Fresno County would consider proposals for PV solar development on agricultural lands within ¼ mile of the WSP site.

As discussed under 'Near-Term' conditions, it is expected that the potential seismic and geologic hazards and any adverse soil conditions that would affect future solar development adjacent to the WSP site would be mitigated through building code requirements and design recommendations of geotechnical engineers for each project, as would be required for projects in the adjacent areas located in either Kings County or Fresno County. For the WSP solar development these measures are specified in MMs GEO-1a through GEO-4a, GEO-5, GEO-6a, and MM HYD-1. The specified geotechnical and structural engineering measures would be expected to fully mitigate or avoid all of the potential geologic and soils hazards for the WSP plan area and would also be required for the cumulative project sites. While constructing the facilities to meet the seismic design criteria of the California Building Code would not completely eliminate the potential for structural damage during a major earthquake, it would reduce the potential impacts to public safety and property to less-than-significant levels at solar development within the WSP and on the adjacent lands. Therefore, the far-term cumulative geologic and soils impacts associated with WSP solar development would be *less than significant with mitigation*.

WSP Gen-Tie Corridors

Near Term

Under near-term conditions, there are 3 approved and pending solar projects and two transmission projects on lands adjacent to the WSP gen-tie corridors. (Note: The Westside Solar project and Westlands Aquamarine solar project, shown in Figure PD-9, are located within the WSP plan area. Since the impacts associated with these projects are addressed in the WSP impact analysis, they are not included again in the list of cumulative projects below.) These projects are listed below and shown in Figure PD-10, and described in Section *2.5. Completed, Approved, and Pending Projects/Introduction to Cumulative Impact Analysis*.

- Mustang/Orion/Kent South solar projects
- Central Valley Power Connect transmission project (Gates to Gregg Substation)
- Westside Transmission Project (Gates to Dos Amigos/Los Banos Substation)

The WSP gen-tie corridors and the other cumulative near-term projects are subject to similarly low levels of geologic and seismic hazards such as ground shaking, liquefaction, and slope failures. In all cases, the potential geologic hazards would be minimized through compliance with applicable building codes and standards, which would ensure that the projects and facilities are designed and constructed to withstand the level of hazard predicted for each project. As such, the level of geologic hazard would be reduced to less-than-significant levels at each cumulative site, and the cumulative impact from geologic hazards would be *less than significant*.

The soils of the cumulative sites are somewhat variable, ranging from sandy loams along the west side of the valley to more clayey soils toward the interior of the valley. The soil characteristics at each cumulative site would determine the potential for soils expansion, shallow groundwater conditions, soil corrosivity, and soil erosion. However, it is expected that the geotechnical engineering studies that would be required for each cumulative project would identify soils engineering specifications that would incorporated into project design and construction to address any localized adverse soil conditions. For the WSP gen-tie projects these measures are specified in MMs GEO-1b through GEO-4b, GEO-6b, and MM HYD-1. It is expected that the same or similar measures would also be required for the cumulative projects. As such, the level of soils hazard would be reduced to less-than-significant levels at each cumulative site, and the near-term cumulative impact from soils hazards associated with the WSP gen-tie projects would be *less than significant with mitigation*.

Far Term

For far-term conditions, the analysis of cumulative geology and soils impacts considers the full buildout of land uses adjacent to and near the WSP gen-tie corridors, as shown in the general plans of Kings County and Fresno County. Under both counties' general plans, the predominant land use planned in the vicinity of the WSP gen-tie corridors is agricultural. Thus it is reasonable to assume that agricultural production will remain the dominant land use on the adjacent and surrounding lands for the life of the general plan. There is the potential for additional solar and transmission projects to be proposed and planned in the vicinity of the gen-tie corridors over the next 20 years, although the precise location and nature of such projects is currently unforeseeable.

As discussed under 'Near-Term' conditions, it is expected that the potential seismic and geologic hazards and any adverse soil conditions that would affect future development adjacent to the WSP gen-tie corridors would be mitigated through compliance with applicable building codes and standards, as well as design recommendations of geotechnical engineers for each project. For the WSP gen-tie projects these measures are specified in MMs GEO-1b through GEO-4b, GEO-6b, and MM HYD-1. It is expected that the same or similar measures would also be required for the cumulative projects. The specified geotechnical and structural engineering measures would be expected to fully mitigate or avoid all of the potential geologic and soils hazards. Therefore, the far-term cumulative geologic and soils impacts associated with the WSP gen-tie projects would be *less than significant with mitigation*.

Mitigation Measures:

***Westlands Solar Park*. Implement MMs GEO-1a, GEO-2a, GEO-3a, GEO-4a, GEO-5, GEO-6a, and HYD-1. No additional mitigation is required.**

***WSP Gen-Tie Corridors*. Implement MMs GEO-1a, GEO-2a, GEO-3a, GEO-4a, GEO-6a, and HYD-1. No additional mitigation is required.**

REFERENCES/BIBLIOGRAPHY – GEOLOGY AND SOILS

CGS 1986 — California Department of Conservation (DOC), California Geological Survey (CGS). 1986. *Alquist-Priolo Earthquake Fault Zone Maps – Los Banos, Ortigalita Peak, Ortigalita Peak NW, San Luis Dam, Pacheco Pass*. Effective July 1, 1986. http://maps.conservation.ca.gov/cgs/informationwarehouse/index.html?map=regulatorymaps

CGS 2010a — California Department of Conservation (DOC), California Geological Survey (CGS). 2010. *2010 State Geologic Map of California*. http://maps.conservation.ca.gov/cgs/gmc/

CGS 2010b — California Department of Conservation (DOC), California Geological Survey (CGS). 2010. *2010 Fault Activity Map of California*. http://maps.conservation.ca.gov/cgs/fam/

CPUC 1994 — California Public Utilities Commission (CPUC). 1995. *General Order No. 131-D*. Effective July 8, 1994. http://docs.cpuc.ca.gov/PUBLISHED/Graphics/589.PDF

DOGGR 2001 — California Department of Conservation (DOC), Division of Oil, Gas, and Geothermal Resources (DOGGR). 2001. *Oil, Gas, and Geothermal Fields in California 2001 (map)*. ftp://ftp.consrv.ca.gov/pub/oil/maps/Map_S-1.pdf

DOGGR 2003 — California Department of Conservation (DOC), Division of Oil, Gas, and Geothermal Resources (DOGGR). 2003. *Oil, Gas & Geothermal – District 5 Maps*. April. http://www.conservation.ca.gov/dog/maps/Pages/d5_index_map1.aspx

DOGGR 2017 — California Department of Conservation (DOC), Division of Oil, Gas, and Geothermal Resources (DOGGR). 2017. *Division of Oil, Gas and Geothermal Resources Well Finder*. http://maps.conservation.ca.gov/doggr/index.html#close

DWR 1979 — California Department of Water Resources (DWR). 1979. *The California Water Atlas*. http://www.maproomblog.com/2010/01/1979_california_water_atlas_now_online.php

Fresno County 2000a — County of Fresno. 2000. *Fresno County General Plan Update EIR*. February. Available at http://www2.co.fresno.ca.us/4510/4360/General_Plan/GP_Final_EIR/EIR/Intro1.pdf

Fresno County 2000b — County of Fresno. 2000. *Fresno County General Plan –Policy Document*. October. Available at http://www2.co.fresno.ca.us/4510/4360/General_Plan/GP_Final_policy_doc/Table_of_Contents_rj_blue.pdf

Fresno County 2000c — County of Fresno. 2000. *Fresno County General Plan – Background Report*. October. Available at http://www.co.fresno.ca.us/viewdocument.aspx?id=5696

Fresno County 2013 — County of Fresno. 2013. *Solar Facility Guidelines*. Revised by BOS on 5/21/13. Available at http://www.co.fresno.ca.us/ViewDocument.aspx?id=53400

Fresno County 2015 — County of Fresno. 2015. *Fresno County Ordinance Code*. As amended through November 17, 2015. https://www.municode.com/library/ca/fresno_county/codes/code_of_ordinances

Kings County 1998 — Kings County. 1998. *Kings County Building Ordinance, Chapter 5 – Kings County Code of Ordinances*. Adopted by Ordinance No. 567, January 15, 1998. http://www.countyofkings.com/home/showdocument?id=4068

Kings County 2002 — Kings County. 2002. *Dairy Element of the Kings County General Plan*. Adopted July 30, 2002. http://www.countyofkings.com/home/showdocument?id=4104

Kings County 2003 — Kings County. 2003. *County of Kings Improvement Standards*. May 6, 2003. http://www.countyofkings.com/home/showdocument?id=3098

Kings County 2009a — Kings County. 2009. *Kings County Subdivision Ordinance, Chapter 21 – Kings County Code of Ordinances. Adopted by Ordinance No. 599.1, August 27, 2009*. https://www.municode.com/library/ca/kings_county/codes/code_of_ordinances?nodeId=COOR_CH21SUOR

Kings County 2010a — Kings County. 2010. *2035 Kings County General Plan*. Adopted January 26, 2010. http://www.countyofkings.com/planning/2035%20General%20Plan.html

Kings County 2016a — Kings County. 2016. *Kings County Code of Ordinances, as amended through October 4, 2016*. https://www.municode.com/library/ca/kings_county/codes/code_of_ordinances

Kings County 2016b — Kings County. 2016. *Kings County Development Code, Appendix A – Kings County Code of Ordinances*. Effective February 26, 2016. http://www.countyofkings.com/departments/community-development-agency/information/zoning-ordinance

NRCS 1986 — U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS). 1986. *Soil Survey of Kings County California*. September. http://www.nrcs.usda.gov/Internet/FSE_MANUSCRIPTS/california/CA031/0/kings.pdf

NRCS 2006 — U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS). 2006. *Soil Survey of Fresno County California, Western Part*. November. http://www.nrcs.usda.gov/Internet/FSE_MANUSCRIPTS/california/CA653/0/fresno.pdf

USBR 2006 — U.S. Bureau of Reclamation. 2006. *San Luis Drainage Feature Re-Evaluation – Final EIS*. June 8. http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=61

USBR 2011 — U.S. Bureau of Reclamation (USBR). 2011. *San Joaquin River Restoration Program – Draft Program Environmental Impact Statement Report*. April. http://www.usbr.gov/mp/nepa/documentShow.cfm?Doc_ID=7560

USGS 1997 — U.S. Geological Survey (USGS). 1997. *Digital Compilation of "Landsliding Overview Map of the Coterminous United States," 1982. USGS Open-File Report 97-289*. http://landslides.usgs.gov/hazards/nationalmap/

USGS 1998 — U.S. Geological Survey (USGS). 1998. *Environmental Setting of the San Joaquin-Tulare Basins, California*. USGS Water-Resources Investigations Report 97-4205. http://ca.water.usgs.gov/sanj/pub/usgs/wrir97-4205/wrir97-4205.pdf

USGS 2014 — U.S. Geological Survey (USGS). 2014. *Seismic Hazard Maps for Coterminous United States, 2014*. http://pubs.usgs.gov/sim/3325/pdf/SIM3325_sheet1.pdf

USGS 2016 U.S. Geological Survey (USGS). 2016. *California Aqueduct: Evaluation of Groundwater Conditions and Land Subsidence along the California Aqueduct*. http://ca.water.usgs.gov/projects/central-valley/california-aqueduct-subsidence.html

WWD 2013 Westlands Water District (WWD). 2013. *Generalized Depth of Sub-Corcoran Piezometric Groundwater Surface (Map)*. December. http://wwd.ca.gov/wp-content/uploads/2015/07/2014-W-0006.pdf

WWD 2015 Westlands Water District (WWD). 2015. *Generalized Depth to Shallow Groundwater – April 2015 (Map)*. April http://wwd.ca.gov/wp-content/uploads/2015/07/april01d.pdf

WWD 2015 Westlands Water District (WWD). 2015. *Generalized Depth of Shallow Groundwater Surface – April 2015 (Map)*. April. http://wwd.ca.gov/wp-content/uploads/2015/08/gdsgs-april-2015.pdf

This page intentionally left blank

3.7. HAZARDS and HAZARDOUS MATERIALS

3.7.1. ENVIRONMENTAL SETTING

Westlands Solar Park

The following discussion of environmental site conditions within the WSP plan area is partly based on the following sources:

1. *Phase I Environmental Site Assessment, Proposed Westside Solar Park, Assessor's Parcel Numbers (APNs) 026-300-032, 026-300-033, 026-300-038, 026-300-043, 026-320-002, 026-320-003, 026-320-017, and 026-320-020, Lemoore, California*, prepared by Moore Twining Associates, dated April 6, 2011. (This Phase 1 ESA covers the area designated as WSP Subarea 11 on Figure PD-3, which is located to the east and south of the off-site Shannon Ranch complex.)

2. *Environmental Assessment of Soils for Arsenic and Environmentally Persistent Pesticides (OCPs); Westside Solar Project – Northern 18 acres, Southeast Corner of Avenal Cutoff Road and 25th Avenue, Lemoore, California,* prepared by Moore Twining Associates, dated February 19, 2015. (This environmental assessment consisted of follow-up soil sampling and testing for the Westside Solar Project CUP referenced in item 1 above.)

3. *Phase I Environmental Records Review, Westlands Solar Park, Stratford, Kings County, California,* prepared by Moore Twining Associates, dated January 26, 2016. (This report consists of an environmental records review for the entire WSP plan area.)

The above-listed documents are incorporated into this EIR by reference, as provided under CEQA Guidelines Section 15150. The documents are available for review at the Westlands Water District headquarters in Fresno.

The Westlands Solar Park Master Plan provides the planning framework for the future development of 12 subareas or solar generating facilities to be constructed over about 12 years. Since agricultural activity will continue within the subareas until they are developed, it is premature to conduct Phase I Environmental Site Assessments for all 12 subareas at this time, since the findings of any such WSP-wide Phase I ESA would be obsolete by the time the SGFs are planned for construction. Instead, this programmatic analysis considers the findings of the previous environmental assessments conducted within portions of the WSP plan area in the evaluation of potential hazards and hazardous materials impacts for the overall WSP plan area. Site-specific Phase I ESAs will be required during subsequent environmental reviews in conjunction with CUPs for each WSP solar project. These site-specific ESAs will identify the need for any follow-up environmental assessments and site-specific mitigation measures, as appropriate, for each WSP solar project.

The previous Phase I Environmental Site Assessments (ESAs) conducted by Moore Twining Associates (MTA) on Subareas 1 and 11 consisted of the following: visual inspections of the site and surrounding

areas; reviews of historical aerial photographs, historical topographic maps, building permit records, and other property data sources; reviews of Kings County Division of Environmental Health Services (EHS) files; and interviews with persons with knowledge of present and past uses of the property. As part of the Phase I ESA, a government records report, prepared by Environmental Data Resources (EDR), was obtained. This report searches federal and state databases, including California Government Code 65962.5 list (Cortese List) and databases maintained by the Regional Water Quality Control Board, for potential sources of hazardous substances or petroleum that might affect the soil and/or groundwater quality of the project site and its vicinity.

Conditions within WSP Plan Area

The WSP plan area has been in agricultural cultivation since at least 1940. There are currently no buildings or structures within the plan area, and none are known to have existed on-site in the past. The environmental conditions associated with the WSP plan area are described below.

Conditions Related to Agricultural Operations

Above Ground Storage Tanks (ASTs)

There are numerous polyvinyl ASTs, varying in size, in several fertilizer mixing areas located throughout the plan area. These tanks are used to store fertilizer until it is mixed with water and pumped out to crops. There is no knowledge or record of any spills, leaks, incidents, or violations associated with these areas. MTA found no evidence of staining or leakage on or around any of the tanks in Subarea 11. It is expected that subsequent assessments elsewhere in the WSP plan area will also find no evidence of spills or leaks near ASTs, although this is subject to confirmation through future Phase 1 ESAs conducted at each SGF site.

Trailer Tanks

There are several trailer tanks (approximately 750-gallons in capacity) located throughout the plan area. These tanks are used to spray fertilizers and insecticides at the site. MTA found no evidence of staining, spills, or leakage associated with the trailer tanks in Subarea 1. It is expected that subsequent assessments elsewhere in the WSP plan area will also find no evidence of spills or leaks near trailer tanks, although this is subject to confirmation through future Phase 1 ESAs conducted at each SGF site.

55-Gallon Drums

Several 55-gallon drums containing motor oil were associated with the mixing areas and agricultural wells. This oil is used to lubricate bearings associated with the pump systems. Apart from some light staining on the surface of several of the drums, MTA found no evidence of staining, spills, or leakage associated with these drums in Subareas 1 or 11. It is expected that subsequent assessments elsewhere in the WSP plan area will also find no evidence of spills or leaks near oil drums, although this is subject to confirmation through future Phase 1 ESAs conducted at each SGF site.

Agricultural Wells and Pump Systems

Several agricultural wells and associated pump systems are located throughout the WSP plan area. MTA found no evidence of spills or leakage associated with wells in Subareas 1 or 11. It is expected that subsequent assessments elsewhere in the WSP plan area will also find no evidence of spills or leaks near

agricultural wells or pump systems, although this is subject to confirmation through future Phase 1 ESAs conducted at each SGF site.

Canals and Ponds

A number of canals, ditches, and small ponds are located throughout the WSP plan area. MTA observed no sheening, discolored water, or odors associated with the canals, ditches, and ponds in Subareas 1 and 11. It is expected that subsequent assessments elsewhere in the WSP plan area will also find no evidence of sheening, discolored water, or odors associated with canals, ditches, and ponds, although this is subject to confirmation through future Phase 1 ESAs conducted at each SGF site.

Agricultural Chemical Application

Past and current agricultural practices within the WSP plan area include the application of agricultural chemicals such as fertilizers, pesticides, and herbicides. MTA found no evidence of contamination such as staining or stressed vegetation within Subareas 1 or 11. However, due to the past and present use of the site for agricultural purposes, there is a potential that environmentally persistent pesticides may have been applied, and their residues may still be present in hazardous concentrations. (See Impact HAZ-3 below for detailed discussion.)

Pole-Mounted Electrical Transformers

Several pole-mounted transformers are present near production well sites in the WSP plan area. The transformers are owned and operated by PG&E. Within Subareas 1 and 11, MTA found the transformers to be in good working order, and were labeled "Non-PCB Containing." MTA found no evidence of staining, leakage, or stressed vegetation associated with the transformers.

PCBs (polychlorinated byphenyls) were historically used in dielectric (insulating) fluids in electrical transformers. Due to their high toxicity, the manufacture of PCBs was banned in 1979 and the frequency with which PCBs were found as a component of dielectric fluids decreased significantly over time. Consequently, transformers manufactured and installed before 1979 may well be classified as PCB transformers (defined as having a PCB content greater than 500 parts per million) or PCB-contaminated transformers (defined as having a PCB content of 50 to 499 parts per million). However, transformers manufactured and installed after 1979 are more likely to be non-PCB transformers (defined as having a PCB content less than 50 parts per million) or to contain no PCBs in the dielectric fluid. Given that pole-mounted transformers observed by MTA on the WSP plan area to date are labeled as non-PCB containing, it is expected that this will found to be the case with other pole-mounted transformers in the WSP plan area, such that the potential release of dielectric fluids is a low level environmental concern. The subsequent Phase I ESAs required for each WSP solar project would confirm the presence or absence of PCBs in pole-mounted transformers.

High Voltage Power Lines

There are several existing high-voltage transmission lines that traverse the WSP plan area. These include the PG&E 230-kV Henrietta-Gates transmission line that crosses the northwestern portion of the plan area, and a PG&E 70-kV transmission line that cuts across the extreme northwest corner of the plan area. In addition, the PG&E 70-kV Henrietta-Tulare Lake transmission line extends due south on the 25th Avenue alignment through the eastern portion of the plan area. The concern with high-voltage lines is

electrocution hazard during nearby construction, and potential exposure to electromagnetic fields (EMFs). These hazards are discussed in detail under Impacts HAZ-6 and HAZ-7, respectively.

Natural Gas Pipeline

There is an active natural gas transmission pipeline, owned and operated by Southern California Gas Company, which runs parallel to and southeast of Avenal Cutoff Road through the WSP plan area. A branch pipeline splits off of this main gas pipeline at Laurel Avenue and runs eastward along the south side of Laurel to the community of Stratford. The concern with high-pressure gas pipelines is the risk of explosion caused by inadvertent contact by excavating equipment. This potential hazard is discussed in detail in Impact HAZ-6.

Abandoned Oil Wells

According to information obtained from the California Department of Conservation, Division of Oil, Gas and Geothermal Resources (DOGGR), there are 9 reported oil wells located within the WSP plan area, all of which have been plugged and abandoned. MTA's Phase 1 ESA on Subarea 11 stated that there are no reported releases, spills, incidents, or violations associated with the wells within that subarea. It is expected that subsequent assessments elsewhere in the WSP plan area will also find that there are no reported releases, spills, incidents, or violations associated with other abandoned oil wells within the WSP plan area, although this is subject to confirmation through future Phase 1 ESAs to be conducted at each SGF site. This potential hazard is discussed in detail in Impact HAZ-5.

Structures, Septic Systems, Waste Disposal Sites

There is no evidence or records of any previous structures, septic systems, or waste disposal within the WSP plan area.

Off-Site Conditions

Based on a review of regulatory records and databases by MTA, there are no listed cases in the WSP vicinity. However, MTA noted the following sites in its Phase I ESA on Subarea 11:

Shamrock Farms Yard: Located just west of the WSP site at 28088 Avenal Cutoff Road, this fenced-in yard area includes numerous polyvinyl tanks with various storage capacities that are reportedly used for fertilizer storage. The records search indicated that there are 3 above-ground storage tanks (ASTs) and one underground storage tank (UST) associated with this yard. There are no reported spills, releases, incidents, or violations associated with this property.

Esajian Farming Company Airstrip: Located just west of the WSP site on the north side of Gale Avenue, west of Avenal Cutoff Road, this airstrip appears to have been in operation since at least the mid-1950s. Although it is likely that pesticides, fertilizers, and fuel have been associated with this airstrip, there are no reported releases, spills, or violations associated with this facility.

Former Military Airfield Site. According to information obtained from the Central Valley Regional Water Quality Control Board (CVRWQCB), the former "Lemoore Auxiliary Field #4" was located outside the WSP plan area on the north side of Nevada Avenue, within Section 32 (APN 026-320-020)(i.e., the section immediately south of the tailwater pond). The airfield is reported as an old "Formerly Used Defense"

(FUD) facility, but the RWQCB has no further information on it. This site has a very low priority rating from RWQCB, and a representative of the RWQCB believes that it is very unlikely that anything impacting the WSP plan area would have occurred here. While the State Water Resources Control Board (SWRCB) "GeoTracker" web page lists this incident as a leaking underground storage tank, a representative of the RWQCB stated that this designation is incorrect, and that RWQCB has no files for this incident. There are no surface indications or evidence of the former airfield within Section 32 or in adjacent sections. Therefore, this former airfield is not considered to pose a hazard to WSP solar development.

NAS Lemoore. The DTSC's EnviroStor website lists NAS Lemoore, located two miles north of the WSP plan area, as the location of multiple instances of soil and groundwater contamination associated with aircraft maintenance and fueling operations. The areas of contamination are in various stages of remediation and monitoring (DTSC 2017).

WSP Gen-Tie Corridors

Based on a review of regulatory records and databases, there are no listed regulatory cleanup or open investigation sites within or near the WSP Gen-Tie Corridors. A review of the DTSC's EnviroStor Database and SWRCB's GeoTracker database identified the following sites within one mile of the gen-tie corridors (DTSC 2016, SWRCB 2016).

Lemoore Auxiliary Field #4. This is the same former military facility listed above, and is located approximately 1,000 feet north of the WSP-South to Gates Gen-Tie corridor. Contrary to the above description, a recent search of GeoTracker (July 21, 2016) included no indication of a leaking underground storage tank. No potential contaminants or contaminant sources are identified. The lead agency (DTSC) indicates that this case has been closed as of 4/13/2011.

Indian Auxiliary Field #3. This former military facility is located south of Jayne Avenue approximately one mile south of the WSP-South to Gates Gen-Tie corridor. The EnviroStor entry indicates that the site was used as an auxiliary landing field by the Army Air Corps in connection with the Lemoore Basic Flying School during World War II. Improvements included hard surfaced runway and support buildings. The lead agency (DTSC) indicates that this site is inactive and needs evaluation. Thus far no hazards have been identified. The lead agency (DTSC) indicates that no further action is required on this site.

3.7.2. REGULATORY CONTEXT

Definition of Hazardous Materials

A material is considered hazardous if it appears on a list of hazardous materials prepared by a federal, state, or local agency, or if it has characteristics defined as hazardous by such an agency. A hazardous material is defined in Title 22 of the California Code of Regulations (CCR) 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 (California Code of Regulations, Title 22, Section 66260.10).

Chemical and physical properties cause a substance to be considered hazardous, including the properties of toxicity, ignitability, corrosivity, and reactivity. These terms are defined in the CCR, Title 22, and Sections 66261.20-66261.24. Factors that influence the health effects of exposure to hazardous material include the dose to which the person is exposed, the frequency of exposure, the exposure pathway and individual susceptibility.

Federal

Comprehensive Environmental Response, Compensation and Liability Act

The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), commonly known as Superfund, was enacted by Congress in 1980. This law created a tax on the chemical and petroleum industries and provided broad federal authority to respond directly to releases or threatened releases of hazardous substances from inactive hazardous waste sites that may endanger public health or the environment. CERCLA established prohibitions and requirements concerning closed and abandoned hazardous waste sites, provided for liability of persons responsible for releases of hazardous waste at these sites and established a trust fund to provide for cleanup when no responsible party could be identified, and authorizes response actions. The U.S. Environmental Protection Agency (U.S. EPA) has principal authority for administration of CERCLA.

Resource Conservation and Recovery Act

Resource Conservation and Recovery Act (RCRA) provides the U.S. EPA with the authority to control hazardous waste, including the generation, transportation, treatment, storage and disposal of hazardous waste. It defines hazardous waste, provides for a "cradle-to-grave" tracking system and imposes stringent requirements on treatment, storage and disposal facilities. The 1986 amendments to RCRA enabled EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances. RCRA focuses only on active and future facilities and does not address abandoned or historical sites, which are covered under CERCLA.

In 1992, the primary responsibility for administration of RCRA in California was delegated to the California Department of Toxic Substance Control (DTSC). The federal EPA continues to regulate hazardous substances under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).

Occupational Safety and Health Administration Act

Enacted in 1970, this act established the Occupational Safety and Health Administration (OSHA), which is responsible for the preparation and enforcement of occupational health and safety regulations with the goal of providing employees a safe working environment. OSHA regulations cover activities ranging from confined space entry to workplace exposure to hazardous chemicals and activities. For workers who will be potentially exposed to hazardous substances, OSHA requires training under its Hazardous Waste Operations and Emergency Response Standard (HAZWOPER).

In California, the federal OSHA regulations are enforced by the California Occupational Health and Safety Administration (Cal/OSHA), discussed below.

Federal Toxic Substances Control Act

The federal Toxic Substances Control Act authorizes the U.S. EPA to secure information on all new and existing chemical substances and to control any of these substances determined to cause an unreasonable risk to public health or the environment. TSCA also includes requirements for the storage, use, and disposal of Polychlorinated Biphenyl (PCB)-containing materials.

Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)

The primary purpose of FIFRA is to provide federal control of pesticide distribution, sale, and use. Under FIFRA, the U.S. EPA requires users (farmers, utility companies, and others) to register when purchasing pesticides. Users also must take exams for certification as applicators of pesticides. All pesticides used in the U.S. must be registered (licensed) by the EPA. Registration assures that pesticides will be properly labeled and, if applied in accordance with specifications, will not cause unreasonable harm to the environment.

Federal Hazardous Materials Transportation Act

The federal Hazardous Materials Transportation (HMT) Act regulates transportation of hazardous materials. The primary regulatory authorities are the U.S. Department of Transportation (DOT), the Federal Highway Administration (FHWA), and the Federal Railroad Administration. The HMT Act specifies driver-training requirements, load labeling procedures, and container design and safety specifications. The Act requires that carriers report accidental releases of hazardous materials to the Department of Transportation at the earliest practical moment. The California Department of Transportation (Caltrans) implements the federal legislation at the State level, and the regulations are enforced by the California Highway Patrol.

State

The California Environmental Protection Agency (Cal-EPA), the State Water Resources Control Board (SWRCB), and the Regional Water Quality Control Board (RWQCB) have primary responsibility for the use and management of hazardous waste. Within Cal-EPA, the California Department of Toxic Substances Control (DTSC) has primary regulatory responsibility, with delegation of enforcement to local jurisdictions that enter into agreements with the state agency for the management of hazardous materials and the generation, transport and disposal of hazardous waste. Depending on the nature of contamination, the lead agency responsible for the regulation of hazardous materials at a site can be the DTSC, RWQCB, or both. In general, contamination affecting soil and groundwater is handled by the RWQCB and the contamination of soils is handled by the DTSC. DTSC evaluates contaminated sites to ascertain risks to human health and the environment. DTSC also maintains a list of potentially contaminated sites in the state, known as the Cortese List, which is required under California Government Code Section 65962.5. The Cortese List includes: DTSC-listed hazardous waste facilities and sites; California Department of Public Health (CDPH) lists of contaminated drinking water wells; sites listed by the SWRCB as having underground storage tank leaks and which have had a discharge of hazardous wastes or materials into the water or groundwater, and; lists from local regulatory agencies of sites that have had a known migration of hazardous waste/material.

Hazardous Waste Control Law

The California Hazardous Waste Control Law (HWCL) is the State's equivalent to RCRA and closely parallels RCRA by regulating the generation, storage, transportation, treatment and disposal of hazardous waste in the state, and particularly those wastes and activities not covered by the federal program. The primary authority for enforcement of HWCL lies with the DTSC, which also administers the state's delegated responsibilities under RCRA.

Hazardous Substance Account Act

Known as HSAA or the California Superfund, the Act has three purposes: 1) to respond to releases of hazardous substances; 2) to compensate for damages caused by such releases; and 3) to pay the state's 10 percent share in CERCLA cleanups. Contaminated sites that do not qualify for cleanup under CERCLA may be placed on the California Superfund list of hazardous wastes requiring cleanup.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Act grants the RWQCBs, through the SWRCB, authority and responsibility to adopt plans and policies, to regulate discharges to surface and groundwater, to regulate waste disposal sites and to require cleanup of discharges of hazardous materials and other pollutants. The Porter-Cologne Act also establishes reporting requirements for unintended discharges of any hazardous substance, sewage, or oil or petroleum product.

Hazardous Material Release Response Plans and Inventory Act of 1985

This state law, also known as the "Hazardous Materials Release Response Plans Act" or the "Business Plan Act," requires local agencies to regulate the storage and handling of hazardous materials and requires development of a plan to mitigate the release of hazardous materials. Businesses that handle any of the specified hazardous materials must submit to permitting agency (typically the local fire department or health department), an inventory of the hazardous materials, an emergency response plan, and an employee training program. The business plans must provide a description of the types of hazardous materials/waste on-site and the location of these materials. A Business Plan is required to be prepared by any business that uses, handles, or stores a hazardous material or an extremely hazardous material in quantities greater than or equal to the following: 500 pounds of a solid substance, 55 gallons of a liquid, 200 cubic feet of compressed gas, a hazardous compressed gas in any amount, hazardous waste in any quantity. The information in the business plan can then be used in the event of an emergency to determine the appropriate response action, the need for public notification, and the need for evacuation.

Unified Hazardous Waste and Hazardous Materials Management Regulatory Program

The "Unified Program" required the administrative consolidation of six hazardous materials and waste programs (Program Elements) under a single local agency, a Certified Unified Program Agency (CUPA). The Program Elements consolidated under the Unified Program are: Hazardous Waste Generator and On-Site Hazardous Waste Treatment Programs; Aboveground Petroleum Storage Tank Spill Prevention Control and Countermeasure Plan (SPCC); Hazardous Materials Release Response Plans and Inventory Program (a.k.a. Hazardous Materials Disclosure or "Community Right-to-Know"); California Accidental

Release Prevention Program (California ARP); Underground Storage Tank Program; and Uniform Fire Code Plans and Inventory Requirements. The Unified Program is implemented at the local level by CUPAs, which provide a single point of contact for issuance of permits. The CUPA for Kings County is the Department of Public Health, Division of Environmental Health Services (EHS). The CUPA for Fresno County is the Fresno County Department of Public Health, Division of Environmental Health.

Underground Storage of Hazardous Substances Act

This Act requires all steel underground fuel tanks to be fitted with secondary containment or both interior lining and cathodic protection, as well as other leak prevention features. The permitting of each underground storage tank is administered by each county's Certified Unified Program Agency (CUPA), under a Memorandum of Agreement with the State Regional Water Quality Control Boards.

Aboveground Petroleum Storage Act

This Act requires owners or operators of aboveground petroleum storage tanks to file a storage statement, take specific action to prevent spills, and in certain instances, implement a monitoring program. Owners and operators of aboveground petroleum storage tanks with a single tank capacity greater than 1,320 gallons, or with a cumulative storage capacity of greater than 1,320 gallons, are required to file a Storage Statement with the State Water Resources Control Board. Immediately upon discovery of any spill or release of one barrel (42 gallons) or more into any waters of the State, each owner or operator of a tank facility must notify the state, the county, and the city in which the tank facility is located.

Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65)

Enacted in 1986, the purpose of Proposition 65 is to promote clean drinking water and keep toxic substances that cause cancer and birth defects out of consumer products. The Act is administered by Cal-EPA's Office of Environmental Health Hazard Assessment (OEHHA). The law requires that anyone at reasonable risk of exposure be informed when substances classified as toxins are present, and this notice takes the form of specific contents information on consumer product labels. Along with the label requirements, an official list of toxic substances, including their known or suspected risk factors, is maintained and made publicly available.

California Department of Pesticide Regulation

The Department of Pesticide Regulation regulates the use of pesticides and herbicides under the authority of the California Code of Regulations, Title 3, Division 6. The Department's Licensing and Certification Program is responsible for examining and licensing qualified pesticide and herbicide applicators and for certifying pesticide and herbicide applicators who use or supervise the use of restricted pesticides and herbicides.

California Office of Emergency Services (OES)

In order to protect the public health and safety and the environment, the California 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. Basic information on hazardous materials handled, used, stored, or disposed of (including location, type, quantity, and the health risks) needs to

be available to firefighters, public safety officers, and regulatory agencies and needs to be included in business plans in order to prevent or mitigate the 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.

California Occupational Safety and Health Administration (Cal/OSHA)

Cal/OSHA is responsible for adoption and administration of standards for safe workplaces, including standards related to hazardous materials handling. Cal/OSHA standards are generally more stringent than federal regulations. Cal/OSHA regulations concerning the use of hazardous materials in the workplace include requirements for safety training, availability of safety equipment, accident and illness prevention programs, hazardous substance exposure warnings, preparation of health and safety plans to protect workers at hazardous waste sites, and emergency action and fire prevention plan preparation.

California Highway Patrol (CHP)

A valid Hazardous Materials Transportation License, issued by the CHP, is required by 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 California Vehicle Code.

CPUC General Order No. 95

The CPUC General Order 95, "Rules for Overhead Electric Line Construction," sets forth uniform requirements for overhead electrical line design, construction and maintenance, the application of which will insure adequate service and secure safety to persons engaged in the construction, maintenance, operation or use of overhead electrical lines and to the public in general. General Order 95 sets forth standards for minimum distances for conductor spacing and ground clearance, maximum conductor sag, vegetation clearance requirements, and maintenance and inspection rules, among other standards and requirements.

Regional and Local

Kings County

Kings County Division of Environmental Health Services (EHS)

The Kings County Department of Public Health Services, Division of Environmental Health Services (DEHS) has primary authority for administration and enforcement of hazardous materials regulations in Kings County. In accordance with state law requirements, in 1996 the County created the Certified Unified Program Agency (CUPA) to consolidate all County hazardous materials programs under one agency. The DEHS is the designated the lead agency for hazardous materials programs and acts as the single point of contact for issuance of permits. Site inspections of all hazardous materials programs (e.g., aboveground tanks and underground tanks, hazardous waste treatment, hazardous waste generators, hazardous materials management plans, etc.) are consolidated and accomplished by a single inspection. All businesses that handle or store hazardous materials above 55 gallons for liquids, 400

pounds for solids; and 200 cubic feet for compressed gases are required to complete forms and file a Chemical Inventory with the DEHS. Lower thresholds are typically mandated for "Acutely Hazardous Substances." A site map and emergency plan are also required to be submitted by all businesses that submit a Hazardous Materials Business Plan and Chemical Inventory. The program provides emergency response to chemical events to furnish substance identification; health and environment risk assessment; air, soil, water and waste sample collection; incident mitigation and cleanup feasibility options and on-scene coordination for state superfund incidents. The program also provides for the oversight, investigation and remediation of unauthorized releases from underground tanks.

Kings County Fire Department

The Kings County Fire Department has responsibility for managing responses to the release or potential release of hazardous materials, as part of its role as the Office of Emergency Management (OEM) for Kings County.

Kings County General Plan

The Health and Safety Element of the 2035 Kings County General Plan contains the following goal, objective and policy related to hazardous materials that are relevant to the Westlands Solar Park:

B. Community Health

HS GOAL B1 Promote the health and wellbeing of County residents, and support healthy living environments, physical activity opportunities, medical services, and readily available nutritious food sources.

HS OBJECTIVE B1.5 Ensure adequate protection of County residents from new generations of toxic or hazardous waste substances.

RC Policy B1.5.1: Evaluate development applications to determine the potential for hazardous waste generation and be required to provide sufficient financial assurance that is available to the County to cover waste cleanup and/or site restoration in instances where the site has been abandoned or the business operator is unable to remove hazardous materials from the site.

Kings County Code of Ordinances

Regulation of Flammable Liquid Storage

Section 10-23 of the County Code provides that above-ground storage and handling of flammable liquids in quantities greater than 52 gallons at distances of less than 50 feet from a building or property line shall require a permit from the County Fire Chief.

Fresno County

Division of Environmental Health

The Fresno County Department of Public Health, Division of Environmental Health serves as the CUPA for Fresno County. As required under the State's Unified Hazardous Waste and Hazardous Materials Management Regulatory Program described above, the Fresno County CUPA's authority and responsibilities are the same as those described for the Kings County CUPA above.

Fresno County General Plan

The Health and Safety Element of the Fresno County General Plan contains several goals and policies that address hazardous materials, including the following:

F. Hazardous Materials

GOAL HS-F: To minimize the risk of loss of life, injury, serious illness, and damage to property resulting from the use, transport, treatment, and disposal of hazardous materials and hazardous wastes.

Policy HS-F.1: The County shall require that facilities that handle hazardous materials or hazardous wastes be designed, constructed, and operated in accordance with applicable hazardous materials and waste management laws and regulations.

Policy HS-F.3: The County, through its Hazardous Materials Incident Response Plan, shall coordinate and cooperate with emergency response agencies to ensure adequate Countywide response to hazardous materials incidents.

3.7.3. ENVIRONMENTAL IMPACT ANALYSIS

SIGNIFICANCE CRITERIA

Based on the State CEQA Guidelines, Appendix G, the project would be considered to have a potentially significant hazardous materials impact if it would:

a. Create a significant hazard to the public or environment through the routine transport, use, or disposal of hazardous materials. (Impacts HAZ-1 and HAZ-2)

b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. (Impacts HAZ-3, HAZ-4, HAZ-5, HAZ-6, and HAZ-7)

c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. (HAZ-8)

d. Be located on a site which is included on a list of hazardous materials sites complied pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment. (Impact HAZ-9)

e. For a project located within an airport land use plan or, where such plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area? (Impact HAZ-10)

f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area? (Impact HAZ-10)

g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. (Impact HAZ-11)

h. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands. (Impact HAZ-12)

IMPACTS AND MITIGATION

Impact HAZ-1. Potential Hazard from Routine Transport, Use, or Disposal of Hazardous Materials

Westlands Solar Park. **There is a potential for release of hazardous materials during construction, operation, and decommissioning of WSP solar facilities. (*Less-than-Significant Impact with Mitigation*)**

WSP Gen-Tie Corridors. **There is a potential for release of hazardous materials during construction and operation of the WSP gen-tie lines. (*Less-than-Significant Impact with Mitigation*)**

This impact analysis addresses significance criterion 'a' above.

Westlands Solar Park

The WSP solar projects would involve the use of hazardous materials during project construction, facility operation, and decommissioning, as discussed below.

Project Construction

The hazardous materials used during construction of the WSP solar projects would include gasoline, diesel fuel, oils, lubricants, solvents, detergents, degreasers, paints, welding and soldering supplies, pressurized gases, etc. Hazardous wastes that may be generated include waste motor oils and hydraulic fluids, and waste solvents and adhesives.

During construction, substantial quantities of gasoline, diesel fuel, and transformer insulating oil (mineral oil) would be transported to the SGF sites. A spill of these hazardous liquids en route to the project site could result in significant impacts to soil, surface water, groundwater, or the public. However, such materials are routinely and safely transported on public roadways. The transport of large quantities of hazardous materials is strictly regulated by the California Highway Patrol (CHP). Large quantities of hazardous materials used during project construction would be transported along regulated routes by a licensed transporter, and would not pose a significant hazard to the public or the environment.

During construction and decommissioning, minor spills or discharges of hazardous materials could occur, such as minor spills and leaks from vehicles or equipment, or due to improper handling, storage, and/or disposal. The potential for impacts to the public and the environment from routine transport, use, and disposal of hazardous materials during construction of the WSP gen-tie projects represents a *potentially significant impact*. With the implementation of Mitigation Measure HAZ-1 below, and MM HYD-1 (in Section *3.8. Hydrology and Water Quality*), the impact would be reduced to *less than significant*.

Project Operation

Operation and maintenance of the WSP solar facilities would involve the transport, use, and disposal of minor amounts of hazardous materials, including motor vehicle fuel, lubricants, antifreeze, used coolant, janitorial supplies, paint, degreasers, pesticides, herbicides, and fire suppressant. During operation of the solar facilities, minor spills or discharges of hazardous materials could occur due to improper handling, storage, and/or disposal.

The transformers within the solar facilities would contain mineral oil, which ordinarily does not require replacement. The transformers would be provided with secondary containment to minimize hazard from any leaks or spills.

Herbicides would be used at the WSP solar facilities to control noxious weeds and invasive species. The herbicides would be applied by licensed herbicide applicators, in compliance with the regulations of the U.S. EPA, and the California Department of Pesticide Regulation (DPR). As discussed under Impact HAZ-3 below, modern herbicides and pesticides degrade rapidly and therefore are not considered to pose a contamination hazard according to the California Department of Toxic Substances Control (DTSC 2008). As also discussed in Impact HAZ-3, past agricultural practices within the WSP plan area involved the use of environmentally persistent pesticides, although recent soil testing at a site within the plan area indicated that residual concentrations of these "legacy" pesticides in soils are well below hazardous levels (MTA 2015).

It is possible that WSP solar projects may include power storage systems in order to provide for more effective integration of solar power into the electrical grid. Typical systems would consist of battery, fuel cell, and/or compressed air systems in enclosures measuring approximately 40 feet by 10 feet by 9 feet high placed on concrete foundations. To date, no specific storage systems have been proposed or planned for SGFs within the WSP plan area. Some battery systems, such as the lithium ion battery, can result in fire and/or explosion if improperly handled. If lithium ion battery systems are selected for individual SGFs, it is expected that the proper procedures for storage, handling and emergency response would be implemented in accordance with National Fire Prevention Association (NFPA) and OSHA safety standards, which would minimize the health and safety risks associated with battery storage.

It is possible that the WSP solar facilities could employ thin-film modules containing Cadmium-Telluride (CdTe) which is classified as a hazardous material. In any solar facility, it is expected that some modules will occasionally need replacement during the life of the facility. The potential hazards associated with CdTe PV modules are addressed in "Decommissioning" below.

In summary, the operation of the WSP solar facilities has the potential to result in hazards to the public and the environment from routine transport, use, and disposal of hazardous materials during operation of WSP solar facilities. This represents a *potentially significant impact*. With implementation of Mitigation Measure HAZ-1 below, and MM HYD-1 (in Section *3.8. Hydrology and Water Quality*), the impact would be reduced to *less than significant*.

Decommissioning

As described in Chapter *2. Project Description*, when the WSP solar facilities reach the end of their productive lives, the solar arrays and supporting infrastructure would be disassembled and removed, with all materials recycled, reused, or disposed of as appropriate in accordance with the Soil Reclamation Plans to be prepared for each SGF as prescribed in Mitigation Measure AG-2. The materials to be removed would include solar arrays, inverters, transformers, cabling and wiring, and perimeter fencing, among other things. During decommissioning of the solar facilities, minor spills or discharges of hazardous materials could occur due to improper handling, storage, and/or disposal. The potential for impacts to the public and the environment from routine transport, use, and disposal of hazardous materials during decommissioning of the WSP gen-tie projects represents a *potentially significant impact*. With implementation of Mitigation Measure HAZ-1 below, and MM HYD-1 (in Section *3.8. Hydrology and Water Quality*), the impact would be reduced to *less than significant*.

Hazards Associated with Cadmium Telluride PV Technology

The solar installations within WSP may include the use of thin-film PV panels which use cadmium telluride (CdTe) as a semi-conducting material to absorb and convert sunlight into electricity. Cadmium is highly toxic and is classified by U.S. EPA as a probable carcinogen. When combined with tellurium, however, cadmium forms a crystalline lattice that is highly stable (high boiling point, low solubility). During the PV panel manufacturing process, the CdTe is bound between two glass sheets which encapsulate the CdTe layer. CdTe contained within PV modules is highly stable and, even if the modules become broken or damaged, would not mobilize from the glass and into the environment except under extreme conditions, which would not occur under foreseeable operational conditions. During standard operation of CdTe PV systems, there are no cadmium emissions to the environment. Solar panels are in a solid and non-leachable state; broken PV panels would not be a source of pollution to stormwater. In the exceptional case of accidental fires or broken panels, scientific studies show that cadmium emissions remain negligible. The environmental safety of CdTe under normal and extraordinary conditions has been affirmed in studies peer reviewed by the European Commission (Jager-Waldau 2007). In addition, the primary manufacturer and operator of solar facilities with CdTe PV modules, First Solar, operates a recycling program for its solar modules. Through the recycling program, up to 90 percent of the semi-conductor material can be reused in new modules (First Solar 2016). The California Department of Toxic Substances Control (DTSC) has classified all solar modules as universal waste to be recycled (other examples include batteries, electronics, cell phones, etc.)(DTSC 2012). In summary, the normal use of CdTe PV modules for WSP solar facilities would not result in a significant risk of a release of hazardous materials that would be harmful to human health or the environment. It is expected that disposal of solar modules would occur through proper recycling as universal waste, or through the manufacturers

recycling program. Therefore, the potential for health hazard due to CdTe PV panels would represent a *less-than-significant impact*.

In conclusion, the handling, use, storage, transport, and disposal of hazardous materials during the construction, operation, and decommissioning of the WSP solar facilities could potentially result in hazards to the public and the environment. This represents a *potentially significant impact*. With implementation of Mitigation Measure HAZ-1 below, and MM HYD-1 (in Section *3.8. Hydrology and Water Quality*), the impact would be reduced to *less than significant*.

WSP Gen-Tie Corridors

The construction and maintenance of the gen-tie lines would involve the handling and use of hazardous materials such as fuels, lubricants, solvents, welding supplies and other materials. There is a potential for accidental spills or discharges of these materials to occur during construction or operation of the gen-tie lines. The potential for impacts to the public and the environment from routine transport, use, and disposal of hazardous materials during construction and operation of the WSP gen-tie projects represents a *potentially significant impact*. With implementation of Mitigation Measure HAZ-1 below, and MM HYD-1 (in Section *3.8. Hydrology and Water Quality*), the impact would be reduced to *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. Implement MM HAZ-1 (below), and MM HYD-1 (in Section *3.8. Hydrology and Water Quality*).**

***WSP Gen-Tie Corridors*. Implement MM HAZ-1 (below), and MM HYD-1 (in Section *3.8. Hydrology and Water Quality*).**

MM HAZ-1. Protection from Hazardous Materials

In order to protect the public from potential release of hazardous materials, the project applicant shall prepare and implement a Hazardous Materials Business Plan (HMBP) in accordance with the requirements of the Kings County Public Health Department Environmental Services Division and the Hazardous Materials Release Response Plan and Inventory Act of 1985. Under this state law, the applicant is required to prepare an HMBP to be submitted to the Kings County Public Health Department, Environmental Health Services Division, which is the Certified Unified Program Agency (CUPA) for Kings County. The HMBP shall include a hazardous material inventory, emergency response procedures, training program information, and basic information on the location, type, quantity, and health risks of hazardous materials stored, used, or disposed of at the proposed project site, and procedures for handling and disposing of unanticipated hazardous materials encountered during construction. The HMBP shall include an inventory of the hazardous waste generated on site, and shall specify procedures for proper disposal. As required, hazardous waste would be transported by a licensed hauler and disposed of at a licensed facility. According to the HMBP reporting requirements, workers must be trained to respond to releases of hazardous materials in accordance with State and federal laws and

regulations governing hazardous materials and hazardous waste (e.g., HAZWOPER training required by OSHA). Any accidental release of small quantities of hazardous materials shall be promptly contained and abated in accordance with applicable regulatory requirements and reported to the Environmental Health Services Division. As the CUPA for Kings County, the Environmental Health Services Division of the County Public Health Department is responsible for implementation and enforcement of HMBPs. Implementation of the HMBPs for WSP solar projects would ensure that minor spills or releases of hazardous materials would not pose a significant risk to the public or the environment.

Under MM HYD-1 (in Section *3.8. Hydrology and Water Quality*), the applicant for each SGF and gen-tie project will be required to prepare, or to have prepared, and to implement a Storm Water Pollution Prevention Plan (SWPPP) for each phase of the solar project, as required by the State Water Resources Control Board (SWRCB). The SWPPPs will specify best management practices for control, containment of hazardous materials during construction, including housekeeping measures for control of contaminants such as petroleum products, paints and solvents, detergents, fertilizers, and pesticides, as well as vehicle and equipment fueling and maintenance practices, and waste management and disposal control practices, among other things. The implementation and enforcement of SWPPPs at each SGF and gen-tie site is the responsibility of the Central Valley Regional Water Quality Control Board, whose responsibilities include conducting inspections of the project construction sites to ensure effective implementation of Best Management Practices (BMPs) specified in the SWPPPs prepared for each project phase.

In summary, the implementation of HMBPs and SWPPPs in conjunction with the construction, operation, and decommissioning of each WSP solar project and gen-tie project, with oversight by the responsible agencies, would ensure that hazardous materials used in conjunction with the WSP solar projects are properly handled, stored, and disposed.

Impact HAZ-2. Hazards Related to Past and Recent Agricultural Operations

***Westlands Solar Park*. The ground disturbing activities associated with installation of WSP solar facilities could pose environmental health hazards by: 1) mobilizing petroleum products and agricultural chemicals that may be present in the soil near sites of agricultural chemical mixing and storage of lubricants; and 2) mobilizing environmentally persistent "legacy" pesticides that may still be present in hazardous concentrations. (*Less-than-Significant Impact with Mitigation*)**

***WSP Gen-Tie Corridors*. The ground disturbing activities associated with gen-tie construction could pose an environmental health hazard by mobilizing pesticides that may be present in hazardous**

concentrations in the soil due to past agricultural operations. (*Less-than-Significant Impact with Mitigation*)

This impact analysis addresses significance criterion 'b' above.

Westlands Solar Park

Above Ground Storage Tanks (ASTs) and 55-Gallon Drums

There are numerous polyvinyl ASTs, varying in size, in several fertilizer mixing areas located throughout the WSP plan area. These tanks are used to store fertilizer until it is mixed with water and pumped out to crops. In addition, several 55-gallon drums containing motor oil are associated with mixing areas and agricultural production wells. There is no record of any spills, leaks, incidents, or violations associated with these areas. However, these tanks and drums are not stored within secondary containment, and it is possible that materials within these tanks and drums may have spilled onto the nearby soils. If so, any spilled chemicals that may remain in the soil in hazardous concentrations may be mobilized by ground disturbing activities, and this would present a health hazard to construction workers during installation of the solar facilities. This would represent a *potentially significant impact*. With implementation of Mitigation Measure HAZ-2a below, the impact would be reduced to *less than significant*.

Residual Agricultural Pesticides

Past and current agricultural practices in the WSP plan area include the application of agricultural pesticides and herbicides. The potential for agricultural chemicals to be present in hazardous concentrations due agricultural activities is discussed below for past and current agricultural practices, respectively.

Organochlorine Pesticides from Past Agricultural Practices

In the past, agricultural practices commonly included the application of environmentally persistent pesticides such as DDT, Aldrin, dieldrin, and mirex. Collectively known as organochlorine pesticides (OCPs), these compounds were found to be toxic and bioaccumulative, and were banned from use, beginning in 1974 for DDT, and quickly thereafter for other OCPs in California. Due to the environmental persistence of these compounds, residual concentrations may still be present in the soils where they were applied. For example, the half-life of DDT in soil is 2-15 years depending on local climate conditions, while most other OCPs (and POPs – Persistent Organic Pesticides, like Toxaphene) have half-lives of up to 12 years. Thus, a compound with a 15-year half-life would be 50 percent degraded after 15 years, and 75 percent degraded after 30 years and so on. Assuming DDT was applied on a given site, and that the last application was in 1974, and also assuming the high end of the range for its half-life (i.e., 15 years), the concentration of DDT would have degraded to less than 20 percent of its original strength by 2016.

While there is some potential for these "legacy pesticides" to be present on agricultural lands in hazardous concentrations, it is considered more likely that high concentrations would be found in areas where the chemicals were loaded, stored, or mixed. Incidences of such contamination are associated with the "hot spots" resulting from occasional spillage at chemical storage sites and have not been found to be associated with areas where the chemicals were merely broadcast over the crops. Thus,

unless chemical mixing has occurred, there is typically a low potential for environmentally persistent pesticides/herbicides related to crop cultivation to exist in the near-surface soils at concentrations which would require regulatory action, there is a low potential for environmentally persistent pesticides to exist in the near-surface soils at concentrations which would require regulatory action.

It is unknown whether OCPs or POPs were applied at the site before they were banned in the 1970s. If they were applied, there is a low likelihood that the soils within the WSP plan area are contaminated, except possibly at former chemical mixing sites, if they existed within the WSP plan area. In 2015, Moore Twining Associates (MTA) performed a program of soil sampling and testing in order to determine if the soil in the northeast corner contained any significant concentrations of environmentally persistent agricultural chemicals. The analytical results indicated that the soils are well below regulatory screening levels for organochlorine pesticides, as well as Toxaphene and the metal Arsenic. However, it was determined that no chemical mixing had taken place within the area tested, so the results are inconclusive with respect to contaminant levels at former chemical mixing sites. Thus, while the residual concentrations of environmentally persistent legacy pesticides such as DDT are unlikely to be present in hazardous concentrations throughout most of the WSP plan area, there is a possibility that hazardous levels of these chemicals may be present at the locations of previous chemical mixing sites. The potential for environmentally persistent pesticides to be present within the WSP plan area represents a *potentially significant impact*. With implementation of Mitigation Measure HAZ-2a below, the impact would be reduced to *less than significant*.

Recent Use of Agricultural Chemicals

All of the pesticides applied to the site currently and in the recent past consist of non-persistent compounds that degrade rapidly (within a few days or weeks) after application. The longest-lived pesticides applied at the within the WSP plan area include paraquat and glyphosphate (Roundup), which have half-lives of approximately 1,000 days and 100 days, respectively (UCD 2014). As such, the pesticide concentrations would degrade to low levels within one year for all pesticides except paraquat. The Department of Toxic Substances Control (DTSC) does not recommend sampling for currently permitted pesticides since they have relatively short half-lives. While paraquat does have a longer half-life in soil, it has not been detected or detected rarely at trace levels at sites which DTSC has had oversight; therefore, routine analysis for paraquat is not required for field areas. Analysis for paraquat may be required in storage and mixing/loading areas (DTSC 2008). Therefore, recently applied pesticides are not an environmental concern except at chemical mixing sites that involved the handling of paraquat. The potential for non-persistent compounds such as paraquat to be present in hazardous concentrations at current and recent chemical mixing sites represents a *potentially significant impact*. With implementation of Mitigation Measure HAZ-2a below, the impact would be reduced to *less than significant*.

It is noted that the routine application of registered pesticides is not a Recognized Environmental Condition (REC) by the American Society for Testing and Materials (ASTM) if applied according to the labeling instructions (Lavey 2014).

In summary, there is a potential that pesticide residues may be present within the WSP plan area in hazardous concentrations. If so, these pesticide residues may be mobilized by ground disturbing activities and present a health hazard to construction workers during installation of the solar facilities. This would

represent a *potentially significant impact*. With implementation of Mitigation Measure HAZ-2a below, the impact would be reduced to *less than significant*.

In conclusion, unless appropriate measures are implemented, the potential disturbance of existing contaminant sources on the WSP plan area could pose an environmental health hazard to workers on the site and the public. This potential hazard represents a *potentially significant impact*. With the implementation of Mitigation Measure HAZ-2a below, the impact would be reduced to *less than significant*.

WSP Gen-Tie Corridors

The construction of the WSP gen-tie projects would involve ground disturbance associated with site clearance, grading, and excavation for transmission towers, access driveways, pulling sites, and construction staging areas. As shown in Table PD-8 in Section *2. Project Description*, it is estimated that the total area of temporary ground disturbance for the gen-tie projects would be approximately 149 acres, almost all of which would consist of farmland. As discussed above for Westlands Solar Park, there is a potential that due to past application of pesticides to the affected farmland, environmentally persistent pesticides may still be present in the soils in hazardous concentrations. If so, these pesticide residues may be mobilized by ground disturbing activities and present a health hazard to construction workers during construction of the WSP gen-tie projects. This would represent a *potentially significant impact*. With implementation of Mitigation Measure HAZ-2b below, the impact would be reduced to *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. Implement MM HAZ-2a.**

***WSP Gen-Tie Corridors*. Implement MM HAZ-2b.**

MM HAZ-2a. Conduct Soil Sampling and Remediation as Applicable

Prior to initiation of ground disturbing activities at each SGF site, soil samples shall be taken from areas of potential contamination and tested for hazard levels of constituents of concern, in accordance with work plans prepared by qualified professionals. Any soils that exceed regulatory limits for hazardous materials shall be removed or otherwise remediated prior to any ground disturbing activity, to the satisfaction of the responsible regulatory agencies in accordance with applicable laws and regulations. The specific areas within the WSP plan area that are to be sampled and tested for contamination shall include soils beneath and surrounding the following locations:

- **Current and known former locations of fertilizer storage tanks and mixing areas.**
- **Locations of 55-gallon oil drums at fertilizer storage/mixing sites and agricultural production wells.**
- **Random locations within fields subject to potential past application of environmentally persistent pesticides.**

MM HAZ-2b. **Conduct Soil Sampling and Remediation as Applicable**

Prior to initiation of ground disturbing activities for each WSP gen-tie project, soil samples shall be taken from areas of potential contamination and tested for hazard levels of constituents of concern, in accordance with work plans prepared by qualified professionals. Any soils that exceed regulatory limits for hazardous materials shall be removed or otherwise remediated prior to any ground disturbing activity, to the satisfaction of the responsible regulatory agencies in accordance with applicable laws and regulations.

Impact HAZ-3. Worker Exposure to Valley Fever Fungal Spores

***Westlands Solar Park*. The soils of the WSP plan area may contain Valley Fever fungal spores, which can be released to the atmosphere during soil disturbing activity and expose construction workers to risk of Valley Fever. (*Less-than-Significant Impact with Mitigation*)**

***WSP Gen-Tie Corridors*. The soils within the gen-tie corridors may contain Valley Fever fungal spores, which can be released to the atmosphere during soil disturbing activity and expose construction workers to risk of Valley Fever. (*Less-than-Significant Impact with Mitigation*)**

This impact analysis addresses significance criterion 'b' above.

Westlands Solar Park

The WSP plan area is located in an area that may harbor the fungus that causes Valley Fever (or coccidioidomycosis), a lung disease common in the southwestern United States. Valley Fever is caused by the fungus *Coccidioides immitis*, which grows in soils in areas of low rainfall, high summer temperatures, and moderate winter temperatures. The fungus is prevalent in the soils of the San Joaquin Valley, where the highest number of cases of Valley Fever infection are in Fresno, Kings, and Kern County, each of which had more than 75 cases per 100,000 population in 2011 (CDPH 2013). The fungal spores become airborne when the soil is disturbed by winds, construction, farming, or other activities. Most people who inhale the spores do not get sick, and those who have been infected will acquire immunity from future infection. Usually, susceptible individuals experience flu-like symptoms and will feel better on their own within weeks, although some people require antifungal medication (CDC 2014). In a small percentage of cases, symptoms can become severe resulting in pneumonia and meningitis, and in rare cases death. There is an increased risk of exposure to people working in construction and agriculture due to their proximity to potential release of airborne spores (CDPH 2013).

The fungal spores that cause Valley Fever are most prevalent in undisturbed soils. Since the land in Kings County consists predominantly of disturbed agricultural land, the risk of infection due to developments on agricultural land is considered low (Kings County 2009a). However, the fungal spores are too small to be seen and it is unknown if the soils of the WSP plan area contain Valley Fever spores. As such, there is a potential for on-site workers to become infected. The potential for airborne release

of Valley Fever spores would be greatest during construction and decommissioning when soils are temporarily exposed and disturbed by grading and excavation activity.

Cal/OSHA administers state and federal laws that require employers to provide occupational health and safety for workers, including protection from unsafe or unhealthy conditions. Under California Code of Regulations, Title 8, Section 5144, employers are required to evaluate respiratory hazards in the workplace, and if present, to develop and implement a respiratory protection program. In 2013, Cal/OSHA issued citations to contractors at two large solar projects in central California after workers became infected with Valley Fever. The citations were issued following inspections and included the following violations: failure to implement the dust control measures of the employer's Dust Management Plan; failure to stop work under high wind conditions as required under the Dust Management Plan; and failure to prepare and implement a respiratory protection plan, as required by law, including the use of approved respirators (CDIR 2016).

In summary, the health risk to WSP construction workers from potential exposure to Valley Fever represents a *potentially significant impact*. With implementation of Mitigation Measure HAZ-3 below, the impact would be reduced to *less than significant*.

WSP Gen-Tie Corridors

The major portion of the Westlands Transmission Corridors are located in Fresno and Kings counties, which have among the highest incidence rates of Valley Fever in California. The Westlands transmission projects would result in the temporary disturbance of approximately 149 acres, with the potential for release of Valley Fever fungal spores that may be present in the soils. Construction workers who have not developed immunity to Valley Fever through previous exposure would be at risk of infection and serious illness. The health risk to transmission construction workers from potential exposure to Valley Fever represents a *potentially significant impact*. With implementation of Mitigation Measure HAZ-3 below, the impact would be reduced to *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. Implement MM HAZ-3.**

***WSP Gen-Tie Corridors*. Implement MM HAZ-3.**

MM HAZ-3. Protection of Construction Workers from Valley Fever

In order to protect construction workers from Valley Fever, the following measures shall be implemented prior to and during ground disturbing activity:

- **Implement the Dust Control Plan to be approved for each project by the San Joaquin Valley Air Pollution District under District Rule 8021 prior to ground disturbing activity.**

- **Prepare and implement a respiratory protection program for construction workers, as required under California Code of Regulations, Title 8, Section 5144.**

Impact HAZ-4. Hazards from Abandoned Oil and Gas Wells

***Westlands Solar Park*. The abandoned oil and gas wells within the WSP plan area may release gases that pose a potential health and safety hazard to workers and the public. (*Less-than-Significant Impact with Mitigation*)**

***WSP Gen-Tie Corridors*. The abandoned oil and gas wells in the vicinity of the gen-tie corridors may release gases that pose a potential health and safety hazard to workers and the public. (*Less-than-Significant Impact with Mitigation*)**

This impact analysis addresses significance criterion 'b' above.

Westlands Solar Park

As discussed in Section *3.7.1. Environmental Setting*, there are 9 reported oil and gas wells located within the WSP plan area, all of which have been plugged and abandoned. Due to the less stringent regulations pertaining to drilling activities in the past, it is possible that the abandoned oil wells may not have been abandoned in accordance with current safety standards. The possibility exists for oil, methane, or toxic gases (aromatic hydrocarbons or hydrogen sulfide) to migrate up through these wells and to release to the environment. Release of methane gas has the potential to result in fire or explosion. Exposure to toxic gases could pose a health hazard to the public and/or on-site workers during SGF construction or operations.

It is also possible, but unlikely, that abandoned oil and gas wells could be present with the WSP site that are not known or recorded. If so, there is a potential that any such wells could be damaged during construction and result in a release of hazardous substances.

The potential safety and public health hazards associated with abandoned oil and gas wells within the WSP site represent a *potentially significant impact*. With implementation of Mitigation Measure HAZ-4a below, the impact would be reduced to *less than significant*.

WSP Gen-Tie Corridors

As discussed in Section *3.7.1. Environmental Setting*, there are a number of abandoned and plugged oil and gas wells in proximity to the Westlands Transmission Corridors. There is also one inactive oil and gas well that is mapped as "idle" by DOGGR. This well ("Mary Bellochi #1") is located on the north side of Nevada Avenue (just outside the WSP plan area) and north of the WSP-South to Gates Gen-Tie corridor. As discussed above for the Westlands Solar Park, the possibility exists for oil, methane, or toxic

gases (aromatic hydrocarbons or hydrogen sulfide) to migrate up through these wells and to release to the environment, posing a potential fire or explosion hazard, and health hazard to the public and workers. The potential safety and public health hazards associated with abandoned oil and gas wells in the vicinity of the Westlands Transmission Corridors represent a *potentially significant impact*. With implementation of Mitigation Measure HAZ-4b below, the impact would be reduced to *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. Implement MM HAZ-4a.**

***WSP Gen-Tie Corridors*. Implement MM 4b.**

MM HAZ-4a. Safety and Remedial Measures for Abandoned Oil Wells within WSP

Prior to initiation of ground disturbing activities for each WSP solar project, the following measures shall be implemented to minimize potential hazards associated with abandoned oil wells:

- **The site planning for each WSP solar project shall include mapping of all known oil wells on the plans.**
- **The site plans shall show a minimum setback of 25 feet from all oil wells. The site plans shall show these setback zones to be free of all structural, mechanical, and electrical elements. Solar facilities may be planned within the 25-foot setback zone only upon the written authorization of the Division of Oil, Gas, and Geothermal Resources (DOGGR), and subject to the conditions and requirements of DOGGR for such encroachments.**
- **Prior to the issuance of the building permit for each solar project, all known oil wells within the solar project site shall be relocated in the field. The plugged/abandoned wells shall be inspected and tested for leakage prior to construction activities. Any required remedial operations shall be carried out in accordance with the requirements of DOGGR. If the well was not abandoned or abandoned properly, as determined by DOGGR, the well shall be abandoned or re-abandoned to the satisfaction of DOGGR.**
- **In the event that an abandoned or unrecorded oil well is damaged or uncovered during construction activities, the contractor shall contact DOGGR to obtain information on the required remedial operations, and shall obtain prior written approval from DOGGR to perform the remedial operations.**
- **Copies of all correspondence to and from DOGGR concerning oil wells within the WSP plan area shall be submitted to the Kings County Community Development Agency.**

MM HAZ-4b. Safety and Remedial Measures for Abandoned Oil Wells near WSP Gen-Tie Corridors. Prior to initiation of ground disturbing activities for each Westlands transmission project, the following measures shall be implemented to minimize potential hazards associated with abandoned oil wells:

- **The detailed route planning for transmission line alignment shall include mapping of all known oil wells on the plans.**
- **The transmission project plans shall show a minimum setback of 25 feet from all oil wells. The site plans shall show these setback zones to be free of all structural, mechanical, and electrical elements. Transmission lines may be planned within the 25-foot setback zone only upon the written authorization of the Division of Oil, Gas, and Geothermal Resources (DOGGR), and subject to the conditions and requirements of DOGGR for such encroachments.**
- **Prior to the initiation of ground disturbing activities, all known oil wells in the immediate vicinity of the transmission project alignment shall be relocated in the field. The plugged/abandoned wells shall be inspected and tested for leakage prior to construction activities. Any required remedial operations shall be carried out in accordance with the requirements of DOGGR. If the well was not abandoned or abandoned properly, as determined by DOGGR, the well shall be abandoned or re-abandoned to the satisfaction of DOGGR.**
- **In the event that an abandoned or unrecorded oil well is damaged or uncovered during construction activities, the contractor shall contact DOGGR to obtain information on the required remedial operations, and shall obtain prior written approval from DOGGR to perform the remedial operations.**
- **Copies of all correspondence to and from DOGGR concerning oil wells within the WSP plan area shall be submitted to the Community Development Agency/Department of the affected county.**

Impact HAZ-5. Safety Hazards Associated with Existing Natural Gas Pipelines and Power Transmission Lines

***Westlands Solar Park*. Construction activity in the vicinity of the existing natural gas pipelines and electrical transmission lines crossing the WSP plan area are subject to safety hazards associated with those facilities. (*Less-than-Significant Impact with Mitigation*)**

***WSP Gen-Tie Corridors*. Construction activity in the vicinity of the existing natural gas pipelines and electrical transmission lines crossing the WSP gen-tie corridors are subject to safety hazards associated with those facilities. (*Less-than- Significant Impact with Mitigation*)**

This impact analysis addresses significance criterion 'b' above.

Westlands Solar Park

Existing Natural Gas Pipelines

There is an active natural gas transmission pipeline, owned and operated by Southern California Gas Company, which runs parallel and southeast of Avenal Cutoff Road through the WSP plan area. A branch

pipeline splits off just south of Laurel Avenue and runs eastward and roughly parallel to Laurel toward the community of Stratford. The buried gas pipelines run within a 30-foot gas line easement.

Prior to the development of each WSP solar facility affected by the gas pipelines, the precise location of this gas line easements will be mapped on project plans which will show no solar development or supporting facilities within the gas line easements. There are instances where the gas line easements would need to be crossed by permanent access driveways and overhead power collection and transmission lines. The potential hazards associated with the pipeline represent a *potentially significant impact*. With implementation of Mitigation Measure HAZ-5 below, the impact would be reduced to *less than significant*.

Existing High Voltage Power Transmission Lines

As described in Section *3.7.1. Environmental Setting*, the WSP plan area is crossed by three high-voltage power lines, including existing PG&E 230-kV and 70-kV transmission lines that traverse the northwest corner of the WSP plan area, and a PG&E 70-kV transmission line that runs in a north-south direction along the 25th Avenue alignment in the eastern portion of the plan area.

Prior to the development of each WSP solar facility affected by the existing high-voltage power lines, the precise location of the transmission easements will be mapped on engineering plans which will specify avoidance of the transmission easement by non-essential structures. There may be instances where one or more of the transmission easements would need to be crossed or entered by permanent access driveways, and power collection lines. The potential hazards associated with the existing power transmission lines represent a *potentially significant impact*. With implementation of Mitigation Measure HAZ-5 below, the impact would be reduced to *less than significant*.

In summary, the existing natural gas pipelines and power transmission lines crossing the WSP plan area would pose a potential safety impact related to work in the vicinity of these facilities. This would represent a *potentially significant impact***.** With implementation of Mitigation Measure HAZ-5 below, the impact would be reduced to *less than significant*.

WSP Gen-Tie Corridors

Existing Natural Gas and Petroleum Pipelines

The WSP-South to Gates Gen-Tie corridor, described above, would cross the Southern California Gas Company pipeline just east of Avenal Cutoff Road. There is also a major PG&E natural gas pipeline that runs generally parallel to I-5 through the region. This gas pipeline runs alongside the existing 230-kV electrical transmission line from the Gates Substation north to the Dos Amigos Pumping Plant. There are also pipelines carrying oil and petroleum products along the west side of the San Joaquin Valley. Prior to setting the final alignment of the WSP gen-tie lines, the pipeline easements would be mapped on project plans which would specify avoidance of the pipelines by the gen-tie easements. There may be instances where these pipeline easements would need to be crossed by the gen-ties lines. The potential hazards associated with the pipelines represent a *potentially significant impact*. With implementation of Mitigation Measure HAZ-5 below, the impact would be reduced to *less than significant*.

Existing High Voltage Power Transmission Lines

There are several existing high voltage transmission lines in the vicinity of the WSP gen-tie corridors. These are shown in Figure PD-10 in Chapter *2. Project Description*. Several transmission lines converge at the Gates Substation, and the WSP gen-tie lines will cross over one or more of these existing transmission easements and lines. The potential hazards associated with the existing power transmission lines represent a *potentially significant impact.* With implementation of Mitigation Measure HAZ-5 below, the impact would be reduced to *less than significant*.

In summary, the potential safety hazards posed by the WSP gen-tie lines passing over or near existing pipelines and power transmission lines would pose a potential safety impact related to work in the vicinity of these facilities. This would represent a *potentially significant impact.* With implementation of Mitigation Measure HAZ-5 below, the impact would be reduced to *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. Implement MM HAZ-5.**

***WSP Gen-Tie Corridors*. Implement MM HAZ-5.**

MM HAZ-5. Safety and Remedial Measures for Existing Natural Gas Pipelines and Power Transmission Lines

Prior to any construction-related activity planned to occur within the existing easements for gas pipelines or power transmission lines, the project proponent or contractor shall coordinate with the easement holder to obtain authorization for such activity by the easement holder, and shall follow all applicable safety procedures and protocols required by the easement holder for such activity. The construction contract specifications for the WSP solar projects and gen-tie projects shall include the specified safety protocols to ensure safety of workers and integrity of the pipelines and transmission lines during work within the easements.

Impact HAZ-6. Electromagnetic Fields (EMFs) from Electrical Facilities

***Westlands Solar Park*. There is a potential that workers in the vicinity of the existing PG&E transmission lines and the planned internal gen-tie lines and substations within the WSP plan area would be exposed to Electromagnetic Fields (EMFs) emitted by those facilities. However, the work in the vicinity of the existing transmission lines would be relatively short in duration, and the planned WSP gen-tie and substation facilities are planned to be routed and located where the nearest residents and workers would be exposed to long-term EMF levels that are at or near ambient or background levels. (*Less-than-Significant Impact*)**

***WSP Gen-Tie Corridors*. There is a potential that residents and workers in the vicinity of WSP gen-tie lines would be exposed to EMFs emitted by those facilities. However, the gen-tie lines are planned to be routed where the nearest residents would be exposed to long-term EMF levels that are equivalent to or less than ambient or background levels. Worker exposure would be relatively short in duration and would be reduced by implementation of CPUC requirements for EMF reduction on transmission lines. (*Less-than-Significant Impact*)**

This impact analysis addresses significance criterion 'b' above.

Westlands Solar Park

Introduction

All electrical devices and conductors emit low frequency electromagnetic fields or EMFs. The WSP plan area is crossed by three existing high voltage transmission lines, and the Westlands Solar Park will include high-voltage gen-tie lines (34.5 kV and 230 kV), along with several 230-kV substations. There is a long-standing concern with the health effects of long-term exposure to EMFs, although scientific studies have not provided sufficient evidence of an association between EMF exposure from electric utility lines and adverse health effects in humans. It is the position of the California Public Utilities Commission (CPUC) that it is not appropriate to adopt any specific numerical standard in association with EMF until there is a firm scientific basis for adopting a particular value. In the absence of conclusive evidence regarding health effects, no maximum acceptable levels of EMFs have been established in California. The CPUC's policy is to avoid unnecessary exposure to EMFs if such avoidance can be achieved at a cost which is reasonable in light of the risk identified (CPUC 2012).

After concluding an investigation into the health effects of EMF in 1993, the CPUC issued Decision No. 93-11-013, which requires that "utilities shall implement low-cost EMF mitigation measures in new and upgraded projects" (CPUC 1993). CPUC General Order No. 131-D requires proponents of new transmission projects to include measures to reduce potential exposure to magnetic fields (CPUC 1994). Examples of EMF reduction measures include: increasing tower height by 10 feet where existing dwellings are located directly adjacent to transmission rights-of-way; alternative tower designs and phasing arrangements that reduce overall EMF emissions. Potential EMF levels from power lines and substations would also be limited by power line clearance requirements and standards as set forth in CPUC General Order No. 95 and other orders governing the design and construction of such facilities. Currently, there are no federal or state exposure limits or significance thresholds that have been established for human exposure to EMFs. However, there is general agreement that the prudent approach is to avoid exposure to high levels of EMF. Since there are no accepted quantitative significance thresholds for EMFs that can be applied under CEQA, this EIR provides a qualitative evaluation of EMF emissions.

The unit of measurement of magnetic fields is milligauss (mG). The strength of the magnetic field depends on the strength of the electrical current (amperage). The strength of a magnetic field diminishes rapidly with distance from the source of the EMF. For example, the EMF emitted by a desktop light at a distance of one foot is about 33 mG, which drops to about 1.2 mG at a distance of 3 feet. Measurements of household EMF taken during a sample survey of over 700 dwellings by the California Department of Health Services (DHS) found that the average EMF level was 0.71 mG, and 90 percent of homes had levels below

1.58 mG. Individual exposures can vary depending on proximity to appliances and equipment, and on whether a high-current source is nearby (DHS 1999).

Several organizations have issued recommendations for permissible levels of EMF exposure from powerlines. The International Commission on Non-Ionizing Radiation Protection (ICNIRP) recommends a permissible continuous exposure level of 2,000 mG for the general public, and the Institute of Electrical and Electronics Engineers (IEEE) recommends a permissible continuous exposure level of 9,040 mG for the general public (Hannigan 2016).

For power transmission lines, typical EMF levels at given distances vary according to the voltage of the line. For example, for 230-kV lines, typical EMF levels drop off to 1.8 mG at 200 feet from the transmission centerline, or 150 feet from the edge of the right-of-way (for a 100-foot right-of-way). EMF levels of 1.8 mG are within the 0.5 – 4.0 mG range of a typical home environment (NEIHS 2002).

The California Department of Education (CDE) has enacted regulations that require minimum distances between a new school and power transmission lines. The distances vary depending on the voltage of the transmission line and are based on fact that the strength of electric fields from power lines diminishes to near background or common ambient levels (2 mG) at known distances. The required minimum distances for schools from the edge of transmission rights-of-way are as follows: 100 feet for 50-133 kV lines; 150 feet for 220-230 kV lines; and 350 feet for 500-550 kV lines (CDE 2012). It is noted again that these distances are intended to provide general indications of EMF levels, since actual levels fluctuate depending on amperage of the individual transmission lines and other variables. Therefore, these distances are not to be construed as significance thresholds for purposes of evaluating hazard levels at sensitive receptor locations under CEQA, but as a general reference guide for ambient EMF levels.

Construction workers at the WSP solar projects and the WSP gen-tie projects would work in close proximity to high-voltage transmission lines. EMF levels beneath transmission lines vary according to electrical load at any given time. Average EMF emission levels for 230-kV and 500-kV transmission lines, as measured directly beneath the power lines, have been measured at 57.5 mG and 86.7 mG, respectively, by the Bonneville Power Administration. During periods of peak load (about 1 percent of the time), EMF emission levels are approximately double average levels (NEIHS 2002). The American Council of Governmental Industrial Hygienists (ACGIH) has published a Threshold Limit Value (TLV) of 10,000 mG for occupational exposures to EMFs for transmission lines and distribution lines that operate at a frequency of 60 Hz (i.e., the standard frequency of electrical lines, wiring, equipment, and appliances in the United States). The Nonionizing Radiation Committee of the American Industrial Hygiene Association (NIR AIHA) recommends a permissible occupational exposure level of 4,170 mG (Hannigan 2016).

Discussion of EMF Exposure Associated with WSP Solar Facilities

The existing 70-kV and 230-kV transmission lines within the WSP plan area have rights of way of 60 feet and 75 feet wide, respectively. The internal WSP 230-kV gen-tie lines would have rights-of-way of 75- to 100-feet wide. Based on the setback distances established by the California Department of Education, it is expected that EMF levels from the 70-kV lines and 230-kV lines would fall back to approximate background levels at distances of 100 feet and 150 feet, respectively, from the outside edge of the transmission rights-of-way. EMF levels would also drop to approximate background levels within 150 feet of the internal WSP 230-kV substations.

It is anticipated that the main internal WSP 230-kV gen-tie line will follow the 25th Avenue alignment through the WSP plan area in a north-south direction, and that the internal 230-kV substations will be located along that gen-tie corridor. As shown in Figure PD-2, there are no existing residences within several miles of the internal gen-tie route and substation locations. The nearest residential clusters at Westlake Farms complex are 1.4 miles from the internal gen-tie route, and the residences at Shannon Ranch and Stone Land Company Ranch are located more than 3 miles from the internal gen-tie route. Therefore, the EMF levels emitted by the WSP internal gen-ties and substations would drop off to background levels well before reaching these nearest dwellings.

There is also a potential that workers at the WSP site could be exposed to higher than ambient EMF emissions when they are working within 150 feet of a 230-kV gen-tie corridor or substation. During the construction phase, some solar modules would be installed within these distances, and workers would be exposed to greater than background EMF levels for short periods, assuming the nearest gen-ties and/or substations would be operational at the time. Maximum exposure levels would be about 115 mG, and the average exposure level would be 57.5 mG, both of which would be very low compared to recommended permissible occupational exposure levels of 4,000 to 10,000 mG, as discussed above. Additionally, most solar arrays in the WSP plan area would be located farther than 150 feet from these EMF sources, so the overall amount of time construction workers would be exposed to EMF above background levels would be small. No permanent employees would be stationed within WSP solar facilities, and workers who would periodically be on-site for maintenance or panel-washing duties would also spend short periods of time exposed to above-ambient EMF levels. During the majority of their work time operational workers would be subject to EMF at background levels.

In summary, none of the existing residences in the vicinity of the WSP plan area would be subject to higher than approximately ambient EMF levels from WSP internal gen-ties or substations. In addition, construction and operational workers would occasionally be subject to EMFs at higher than background levels, but the exposure levels would be far below recommended occupational exposure levels, and these periods would be relatively short in duration. Therefore, it is concluded that potential EMF levels associated with the construction and operation of WSP solar facilities and internal gen-ties and substations would be *less than significant*.

WSP Gen-Tie Corridors

Introduction

As discussed above for the Westlands Solar Park, this qualitative analysis of EMF emissions is focused on the potential for prolonged exposure to EMFs to occur above ambient or background levels. Since no maximum exposure levels or significance thresholds for EMFs have been established, this discussion is limited to a qualitative assessment of EMF emissions.

As discussed above, EMF levels typically diminish to approximate background levels at a distance of 150 feet from the edge of right-of-way of a 230-kV transmission line. Since only 230-kV transmission lines are planned for the gen-tie lines, the 150-foot distance is applied as guidance in determining whether sensitive receptors in the vicinity of the gen-tie corridors may be subject to substantially greater than ambient EMF levels.

Discussion of EMF Exposure Levels Associated with WSP Gen-Tie Corridors

As shown in Figure PD-7 and Table PD-7 in Chapter 2, there are two groups of residences that are located between 125 feet and 180 feet from the outer boundary of the WSP gen-tie corridors. Both dwelling groups are located along the south side of Nevada/Jane Avenues, with the WSP-South to Gates Gen-Tie line planned to run along the north side of Nevada/Jayne Avenues.

The first potentially affected dwelling ground consists of 2 residences at the Stone Land Company Ranch complex located on the south side of Nevada Avenue in Kings County, approximately 1.5 miles east of Avenal Cutoff Road (this dwelling group identified as #2 in Table PD-7 and Figures PD-2 and PD-7). These dwellings are located 180 feet from the southern boundary of the WSP-South to Gates Gen-Tie corridor. At this distance, EMF levels would generally fall back to levels of 2 mG or less, which would reflect ambient levels.

The second group consists of a series of 8 ranch dwellings located on the south side of Jayne Avenue in Fresno County, approximately 1.3 miles east of SR-269/Lassen Avenue. Identified as dwelling group #10 in Figure PD-7 and Table PD-7, the front facade of the nearest residence is located approximately 125 feet from the southern boundary of WSP-South to Gates Gen-Tie corridor, while the other residences in this group are setback 130 feet from the corridor boundary. At these distances, EMF levels would generally fall back to levels of about 2 – 3 mG, which is within the ambient household range of 0.5 – 4 mG (NEIHS 2002). There are no other dwellings that are within 1,000 feet of the planned WSP gen-tie corridors.

Construction workers on the transmission projects would be exposed to EMFs from the existing 230-kV transmission lines which would run parallel and adjacent to the WSP-North to Gates Gen-Tie Corridor for most of its length. The right-of-way width for the existing 230-kV transmission line is 75 feet. It is anticipated that the planned gen-tie right-of-way would be aligned adjacent to the existing right-of-way. Thus construction of the new towers would likely occur within 150 feet of the existing transmission rights-of-way, thus generally exposing workers to greater than ambient levels of EMFs for intermittent periods during the anticipated 1-year construction period. As discussed above for the Westlands Solar Park, construction workers could be exposed to maximum EMFs of less than 115 mG, and average EMF levels of less than 57.5 mG in proximity to existing 230-kV transmission lines. These emission levels would occur directly beneath the existing transmission lines and would diminish rapidly with distance. These EMF levels would be very low compared to recommended permissible occupational exposure levels of 4,000 to 10,000 mG, as discussed above. Operations staff performing inspections and maintenance on the gen-tie lines would also be exposed to higher than ambient EMF levels for brief periods. Worker exposure levels would generally be reduced through implementation of the CPUC requirements that transmission proponents incorporate EMF reduction measures into transmission projects.

In summary, none of the existing residences in the vicinity of the WSP gen-tie corridors would be subject to higher than approximately ambient or typical household EMF levels from the planned gen-tie lines. Construction and operational workers would be subject to higher than background EMF levels, but these exposure periods would be relatively short in duration, and the maximum and average exposure levels would be far below recommended permissible occupational exposure levels. Therefore, it is concluded that potential EMF exposure levels associated with the construction and operation of the WSP gen-tie projects would be *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

Impact HAZ-7. Hazards or Hazardous Materials within ¼ Mile of Schools

***Westlands Solar Park*. There are no existing or proposed schools within ¼ mile of the WSP plan area. Therefore, WSP solar development would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. (*Less-than-Significant Impact*)**

***WSP Gen-Tie Corridors*. There are no existing schools within ¼ mile of the WSP gen-tie corridors. Therefore, the gen-tie lines would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. (*Less-than-Significant Impact*)**

This impact analysis addresses significance criterion 'c' above.

Westlands Solar Park

There are no existing or proposed schools within one-quarter mile of the WSP plan area. The nearest schools are located in: Stratford, 2.5 miles east; NAS Lemoore, 2.8 miles northeast; Huron, 8 miles west; and Kettleman City, 2 miles south. During construction, hazardous materials such as gasoline, diesel fuel, and transformer insulating oil (mineral oil) would be transported to the SGF sites. If trucks carrying hazardous materials travel to the WSP plan area via SR-41 from the south, it is likely they would pass within ¼ mile of the Kettleman City Elementary School. However, hazardous materials are routinely and safely transported on public roadways. The transport of large quantities of hazardous materials is strictly regulated by the California Highway Patrol (CHP). Large quantities of hazardous materials used during SGF construction would be transported along regulated routes by a licensed transporter, and would not pose a significant hazard to the public or the environment. Therefore, the potential hazards and hazardous materials impacts of WSP solar development upon schools would be *less than significant*.

WSP Gen-Tie Corridors

There are no existing schools within one-quarter mile of the WSP gen-tie corridors. The nearest existing schools are located in Stratford, NAS Lemoore, Huron, and Kettleman City. These schools are located between 3 and 9 miles from the nearest planned gen-tie segment. As discussed above for the WSP plan area, it is possible that trucks carrying hazardous materials to a gen-tie project site or staging area would pass within ¼ mile of a school site. However, hazardous materials are routinely and safely transported on public roadways. The transport of large quantities of hazardous materials is strictly regulated by the California Highway Patrol (CHP). Large quantities of hazardous materials used during gen-tie

construction would be transported along regulated routes by a licensed transporter, and would not pose a significant hazard to the public or the environment. Therefore, the potential hazards and hazardous materials impacts of the WSP gen-tie projects upon schools would be *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

Impact HAZ-8. Any Listed Hazardous Materials Sites on or Near Project Site

***Westlands Solar Park*. There are no hazardous materials sites within the WSP plan area or adjacent properties listed on the Department of Toxic Substances Control's (DTSC's) Hazardous Waste and Substances Site List (Cortese List) compiled pursuant to Government Code Section 65962.5. (*Less-than-Significant Impact*)**

***WSP Gen-Tie Corridors*. There are no hazardous materials sites within the WSP gen-tie corridors or adjacent properties listed on the Department of Toxic Substances Control's (DTSC's) Hazardous Waste and Substances Site List (Cortese List) compiled pursuant to Government Code Section 65962.5. (*Less-than-Significant Impact*)**

This impact analysis addresses significance criterion 'd' above.

Westlands Solar Park

As discussed in Section *3.7.1. Environmental Setting*, there are no hazardous materials sites within the WSP plan area or adjacent properties listed on the Department of Toxic Substances Control's (DTSC's) Hazardous Waste and Substances Site List (Cortese List) compiled pursuant to Government Code Section 65962.5. The nearest listed contamination site is NAS Lemoore, located two miles north of the WSP plan area, where there are multiple instances of soil and groundwater contamination associated with aircraft maintenance and fueling operations. The areas of contamination are in various stages of remediation and monitoring (DTSC 2017). A comprehensive search of all federal, state, and local database information systems likewise indicated no listed hazardous materials sites within or adjacent to the WSP plan area. A review of files for the site and adjacent properties at the Kings County Environmental Health Department (KCEHD), and State Water Resources Control Board (SWRCB) likewise identified no documentation for the plan area or adjacent properties (MTA 2014). As such, the potential impact from listed hazardous waste sites relative to the WSP plan area is *less than significant*.

WSP Gen-Tie Corridors

As discussed in Section *3.7.1. Environmental Setting*, there are no hazardous materials sites within the WSP gen-tie corridors or adjacent properties listed on the Department of Toxic Substances Control's (DTSC's) Hazardous Waste and Substances Site List (Cortese List) compiled pursuant to Government Code Section 65962.5 (DTSC 2016). Review of DTSC's EnviroStor database and the SWRCB's GeoTracker database indicated that there are no open hazardous contamination cases within the gen-tie corridors or nearby areas, apart from those noted above at NAS Lemoore. As such, the potential impact from listed hazardous waste sites relative to the WSP gen-tie corridors is *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

Impact HAZ-9. Hazards to Aviation due to Physical Features and Reflective Surfaces

***Westlands Solar Park*. There is a potential for tall physical features to pose a hazard to aircraft operation due to physical obstruction; however, no structures within the WSP solar projects would be high enough to present a physical obstruction to aviation. The glare from reflective surfaces can be a hazard to aviation; however, the solar PV modules are dark in color and have low reflectivity. (*Less-than-Significant Impact*)**

***WSP Gen-Tie Corridors*. There is a potential for tall physical features to pose a hazard to aircraft operation due to physical obstruction; however, no gen-tie structures would be high enough to present a physical obstruction to aviation. Hazards to crop dusters would be minimized by routing gen-tie lines adjacent to existing transmission lines and County roads. (*Less-than-Significant Impact*)**

This impact analysis addresses significance criteria 'e' and 'f' above.

Westlands Solar Park

The nearest public or public use airports to the WSP plan area include the Hanford and Coalinga municipal airports, and the Harris Ranch airport. All of these airports are located 15 miles or more from the WSP plan area, and no portion of the airport land use plans for these airports includes any part of the WSP plan area. There are no private airstrips within the WSP site, and there are 5 private airstrips within 5 miles of the outside boundaries of the WSP site (see Figure PD-2 in Chapter 2 for locations of nearby airstrips). Four of these airstrips are for personal or corporate use of ranch owners, and one of these airstrips is operated by a crop dusting company (JLUSPC 2011, p. 2-18).

Physical Obstructions

Under Title 14 of the Code of Federal Regulations, a structure would need to be 200 feet or more in height to be considered a potential collision hazard (CFR, Title 14, Aeronautics and Space, §77.17 Obstruction Hazards). The tallest facilities associated with the solar facilities would be as follows: internal WSP gen-tie transmission towers, which may be as high as 175 feet; power collection poles, which may be as high as 70 feet; substation elements, which may reach a height of 125 feet; the O&M buildings, which may be as high as 20 feet; the anemometers, which could be as high as 30 feet; the inverters, which may be as high as 12 feet; and the solar arrays, which may reach as high as 12 feet at their maximum inclination. Thus all WSP structures would be lower than the 200 feet height considered the minimum collision hazard under CFR Title 14.

The WSP solar facilities would not include vertical obstructions that would pose a hazard to aircraft using nearby airstrips. The aircraft operations at the private airstrips would be relatively infrequent, and although crop dusting flights would occasionally traverse the WSP site en route to their destinations, the WSP solar facilities would not include structural elements of sufficient height to be considered a collision hazard. Therefore, the WSP solar facilities would not present a hazard to public or general aviation.

The military airfield at Naval Air Station Lemoore (NASL) is located 5 miles north of the WSP plan area. In 2011, a Joint Land Use Study was completed for NASL, the major purpose of which was to discourage incompatible development in accident potential zones. The JLUS mapping indicates that the southern end of the NAS Lemoore runway is 2.5 miles north of SR-198, and no designated clear zones or accident potential zones extend south of SR-198. The JLUS also designates height restriction zones around the airfield. The north portion of the WSP plan area lies within an NASL designated flight corridor and is subject to Height Restriction Zones "D" and "G" which both have height limits for ground structures of 500 feet above the ground surface (JLUS 2011, p. 2-24). As discussed above, the tallest structural elements within the WSP plan area would be transmission towers for internal gen-ties which could be as high as 175 feet. Thus all structures associated with WSP solar facilities would be well below the NAS Lemoore 500-foot limit for this area and would not create obstructions to flight operations at the military base. Therefore, the potential hazard to aviation posed by physical elements of the WSP solar facilities would be *less than significant*.

Glare from Reflective Surfaces

Glare is an intense light effect resulting primarily from the reflection of sunlight off reflective surfaces when the angle of the sun to the surface is such that sunlight is reflected toward the receiver, causing potential discomfort or distraction of the receiver, or potential impairment of vision under extreme conditions. The main source of potential glare at the project is solar panels, but other sources can include vehicle windshields and reflective building materials, as well as direct illumination.

All of the solar panels planned for the project will be composed of photovoltaic cells. Solar PV employs glass panels that are designed to maximize absorption and minimize reflection to increase electricity production efficiency. Untreated silicon reflects about one-third of incoming sunlight. To limit reflection, solar PV panels are constructed of dark, light-absorbing materials, and are given an anti-reflective coating or textured surface. Depending on incident angle of sunlight, reflectivity of solar modules ranges from about 3 to 10 percent with untreated glass surfaces, which can be reduced to about 2.5 to 7 percent with

the addition of the anti-reflective coating or treatment. In comparison, the reflectivity of standard glass ranges from about 8.5 to 21 percent, or about double that of uncoated solar panels (Sunpower 2010). By contrast, concentrated solar systems, which employ arrays of highly polished mirrors to refocus the radiation on a receiver tube or tower, reflect about 90 percent of the incoming sunlight (FAA 2010).

Further, PV solar systems are designed to maximize absorption of sunlight by keeping the panel surfaces oriented directly to the sun as much as possible. At this direct perpendicular orientation, sunlight light is reflected skyward. However, when the sun is low in the sky (i.e., at dawn or dusk), the angle of reflectance increases, thereby increasing the potential for reflection at or near ground level.

Potential Glare Effects on Aviation

Since solar panels reflect sunlight skyward, there is a potential for the glare from reflected sunlight to affect low flying aircraft passing over or near the WSP plan area. Any glare effect would occur only as long as the angle between the sun, the aircraft, and solar array is constant. Since aircraft would be traveling at high speeds and the angle between the sun, the aircraft, and the solar arrays would be constantly changing, any glare effect would be temporary. Also, since the solar panels would have low reflective intensity and would be covered with anti-reflective coating, any resulting glare effects would not be so bright as to disrupt aircraft operations in the area.

A number of commercial airports have had photovoltaic solar arrays installed on rooftops or in otherwise unusable open areas on or near the facilities. Examples of airports where photovoltaic solar panels have been installed with FAA approval include San Francisco, Oakland, Fresno-Yosemite, Long Beach, and Denver, among others. To date, there no complaints from pilots or air traffic controllers due to glare impacts from existing airport solar PV installations (FAA 2010, p. 41).

Given the proximity of NAS Lemoore to the project site, there is a potential concern with the effect of glare on flight operations at the base. The NAS Lemoore Joint Land Use Study (JLUS) addresses concerns with aviation hazards from reflection and glare. Solar facilities are mentioned specifically for their potential to produce reflective surfaces, but the JLUS acknowledged that the main concern was with highly reflective mirrors used in concentrated solar facilities. The JLUS acknowledges that "if there is no central collection tower, the new solar panels can be made non-reflective and arrays could be installed to not cause any height or reflective issues" (JLUS 2011, p. 2-12). PV solar facilities have been installed at Nellis AFB, and Los Angeles AFB, and are planned for other air bases including NAS Lemoore (S2S 2016).

In summary, that the potential hazard to aviation posed by glare from WSP solar facilities would be *less than significant*.

Safety Hazard to People Working or Residing in the Area

The employment density at the WSP solar facilities would be very low, i.e., a maximum of approximately 50 staff would be at a typical 250 MW SGF at any given time for facility operations, maintenance, and security, or about 12.5 employees per square mile. (Average on-site staff levels would be about 10 staff at a 250-MW facility, or 2.5 employees per square mile.) The existing residential population in the WSP vicinity is also very low, with a total of 32 dwellings located within 1 mile of the WSP boundaries.

As discussed above, the WSP solar facilities would not result in a significant safety hazard to aviation by creating physical obstructions or excessive reflective glare. Therefore, the potential aviation-related safety hazard posed by WSP solar development to people working or residing in the area would be *less than significant.*

WSP Gen-Tie Corridors

The nearest municipal airports to the WSP gen-tie corridors include the Hanford and Coalinga airports, all of which are located between 6 and 20 miles from the gen-tie corridors at their nearest points.

There are a total of 5 private airstrips within 6 miles of the gen-tie corridors. The nearest airstrips are at Stone Land Company Ranch on Nevada Avenue and at Shannon Ranch at Avenal Cutoff Road and Gale Avenue. The WSP-South to Gates gen-tie would be at least 1,500 feet from the end of the runway at Stone Land Company Ranch, and the WSP-North to Gates gen-tie would be at least one mile from the end of the runway at the Shannon Ranch airstrip. The remaining 3 airstrips are located from 3.3 to 5.5 miles from the gen-tie corridors. The gen-tie projects could include towers as high as 175 feet, but most would be lower. These towers would not present vertical obstructions that would pose a hazard to aircraft using nearby airstrips. The aircraft operations at the private airstrips would be relatively infrequent, and local pilots would be well aware of the new transmission towers and lines. Crop dusting operations would need to take the new gen-tie lines into account, but the WSP-North to Gates Gen-Tie would run parallel and adjacent to existing transmission lines that the crop dusters would already be aware of, and the WSP-South to Gates Gen-Tie would follow the Nevada/Jayne Avenue county road corridor. Additionally, the gen-tie lines would not include structural elements of greater than 200 feet and thus would not be considered a collision hazard under Title 14 of the Code of Federal Regulations. Therefore, the WSP gen-tie projects would not present a hazard to public or general aviation.

The WSP gen-tie projects would not include reflective surfaces that could produce glare and pose a safety hazard to aviation.

As discussed above, the WSP gen-tie projects would not result in a significant safety hazard to aviation by creating physical obstructions or excessive reflective glare. Therefore, the potential aviation-related safety hazard posed by the WSP gen-tie projects to people working or residing in the area would be *less than significant.*

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

Impact HAZ-10. Impair or Interfere with Emergency Response or Evacuation Plan

***Westlands Solar Park*. The WSP solar development would not alter the local roadway network or generate substantial traffic; therefore, the WSP solar development would not impair or interfere with an emergency response plan or an evacuation plan. (*Less-than-Significant Impact*)**

***WSP Gen-Tie Corridors*. The gen-tie projects would not alter the local roadway network or generate substantial traffic; therefore, the gen-tie projects would not impair or interfere with an emergency response plan or an evacuation plan. (*Less-than-Significant Impact*)**

This impact analysis addresses significance criterion 'g' above.

Westlands Solar Park

In times of emergency or disaster response, the State highways would serve as primary routes, and designated County arterial roadways in the area would serve as secondary routes. In the vicinity of the WSP plan area, the primary routes would include SR-198, SR-41, SR-269, and I-5, and the secondary routes would consist of Avenal Cutoff Road and Laurel Avenue (Kings County 2010). These nearby highways and County roads provide several escape routes with relatively low ambient traffic volumes. The WSP solar development would not result in changes to the adjacent roadway network and the small operational workforce would not create or increase traffic congestion during times of emergency or disaster. During the construction phases, slow moving vehicles or delivery of large pieces of equipment or components could result in temporary traffic slowdowns, although such conditions would be infrequent and would be managed pursuant to traffic controls specified in Mitigation Measure TR-1 (see section *3.13 Transportation/Traffic*). The WSP solar development would not impair implementation of, or physically interfere with, an adopted emergency response plan or an emergency evacuation plan, and therefore the potential impact in this regard would be *less than significant*.

WSP Gen-Tie Corridors

As is the case with the Westlands Solar Park, the State highways in the region would serve as primary routes, and designated County arterial roadways in the area would serve as secondary routes for emergency response and evacuations. In the vicinity of the WSP Gen-Tie Corridors, the primary routes would include I-5, SR-198, SR-41, and SR-269, and the secondary routes would consist of the principal county roads in western Kings and Fresno counties. These nearby highways and county roads provide several escape routes with relatively low ambient traffic volumes. The gen-tie projects would not result in changes to the adjacent roadway network and the very small operational workforce would have a negligible effect on traffic congestion during times of emergency or disaster. During the construction phases, slow moving vehicles or delivery of large pieces of equipment or components could result in temporary traffic slowdowns, although such conditions would be infrequent and would be managed pursuant to traffic controls specified in Mitigation Measure TR-1 (see section *3.13 Transportation/Traffic*). The WSP gen-tie projects would not impair implementation of, or physically interfere with, an adopted emergency response plan or an emergency evacuation plan, and therefore the potential impact in this regard would be *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

Impact HAZ-11. Wildfire Risk

***Westlands Solar Park*. The WSP plan area is not located within or near a wildland fire hazard area. Therefore, WSP solar facilities would not be subject to risk from wildland fires. (*Less-than-Significant Impact*)**

***WSP Gen-Tie Corridors*. The northern WSP gen-tie project would be subject to moderate wildland fire in small area where it crosses the California Aqueduct. *Less-than-Significant Impact with Mitigation*)**

This impact analysis addresses significance criterion 'h' above.

Westlands Solar Park

The WSP plan area is not located within or near a wildland fire hazard area. The Fire Hazard Severity Zone (FHSZ) map for Kings County prepared by the California Department of Forestry and Fire Protection (CalFIRE) shows the WSP plan area as "unzoned" for fire hazard. The nearest areas zoned on the FHSZ map are located in the foothills to the west of I-5, which are zoned "Moderate Severity Fire Hazard" (CalFire 2007b). The Health and Safety Element of the Kings County General Plan includes a map of Potential Fire Hazards, which shows most of the WSP plan area as being subject to "little or no threat," while areas within 2400 meters of structures are shown as being subject to "moderate threat" (Kings County 2010, Figure HS-9). Therefore, the potential risk of loss, injury or death within WSP solar projects with respect to wildland fires is *less than significant*.

[Note: For a discussion of potential impacts to fire protection services, see Section *3.12. Public Services*.]

WSP Gen-Tie Corridors

The Fire Hazard Severity Zone (FHSZ) maps for Kings and Fresno counties prepared by the California Department of Forestry and Fire Protection (CALFIRE) show that the gen-tie segments are "unzoned" for fire hazard for most of their lengths. However, the northern gen-tie corridor passes through a narrow section of land designated "LRA (Local Responsibility Area) Moderate" (fire hazard) located alongside the California Aqueduct (CalFire 2007a). Therefore, the potential risk of wildland fires with respect to the gen-tie lines represents a *potentially significant impact*. With implementation of Mitigation Measure HAZ-6 below, the impact would be reduced to *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. Implement MM HAZ-6.**

MM HAZ-6. Fire Protection and Safety Plan

The gen-tie project proponent shall prepare a fire protection and safety plan to be implemented during all construction activities associated with the north gen-tie project. The plan shall be prepared in coordination with CalFire and the affected county(s), as applicable.

The provisions included in the Fire Protection and Safety Plan would include requirements such as the following: contractors shall have water tanks or water trucks available in proximity to work areas; construction equipment and vehicles shall be equipped with specified fire suppression equipment; construction personnel shall be required to park vehicles away from dry vegetation; construction workers shall be trained in fire prevention and suppression; and all work shall cease during Red Flag Warnings issued by the National Weather Service.

Cumulative Impacts

Impact HAZ-12. Cumulative Hazards and Hazardous Materials Impacts

***Westlands Solar Park*. The potential hazards and hazardous materials impacts associated with WSP solar development would be avoided or mitigated, or would be less than significant without mitigation, depending on the specific hazard. It is expected that any potential hazards and hazardous materials associated with other cumulative project sites would be similarly avoided or mitigated, or would be less than significant without mitigation. (*Less-than-Significant Cumulative Impact with Mitigation*)**

***WSP Gen-Tie Corridors*. The potential hazards and hazardous materials impacts associated with the WSP gen-tie projects would be avoided or mitigated, or would be less than significant without mitigation, depending on the specific hazard. It is expected that any potential hazards and hazardous materials associated with other cumulative project sites would be similarly avoided or mitigated, or would be less than significant without mitigation. (*Less-than-Significant Cumulative Impact with Mitigation*)**

Geographic Scope of Cumulative Impact Analysis

As discussed in the preceding impact discussions, the potential hazards and hazardous materials impacts associated with WSP solar development would be less-than-significant or would be reduced to less-than-significant levels through mitigation measures to be implemented in conjunction with the individual solar developments. In addition, most of the potential hazards and impacts would be confined to the individual solar project sites. There is a low risk that certain hazards, such as wildfire and release of hazardous materials, could extend beyond the WSP boundaries or the WSP gen-tie corridors and combine with simultaneous or concurrent events on neighboring lands to result in a combined cumulative effect. However, most potential hazards and impacts would be highly localized and would not be given to accumulation with similar effects from other projects. Therefore, for purposes of this cumulative analysis, only the potential hazards and hazardous materials impacts associated with approved and pending projects adjacent to or near the WSP site are included within the geographic scope of analysis. Thus the study area for the analysis of cumulative hazards and hazardous materials impacts is conservatively assumed to extend ¼ mile beyond the boundaries of the WSP plan area and the WSP gen-tie corridors.

Westlands Solar Park

Near Term

Under near-term conditions, there are four pending, approved, and completed projects (or groups of projects) within a ¼ mile radius of the WSP's outside boundaries. All four of these projects comprise solar PV developments. (Note: The Westside Solar project and Westlands Aquamarine solar project are located within the WSP plan area; since the impacts associated with these projects are covered in the WSP impact analysis, they are not included again in the list of cumulative projects below.) These solar projects are listed below and described in Section *2.5. Completed, Approved and Pending Projects/ Introduction to Cumulative Impact Analysis*. Their locations are shown in Figure PD-9.

- Mustang/Orion/Kent South
- American Kings
- Mustang 2
- Kettleman

The combined hazards and hazardous materials impacts of these cumulative projects, together with the potential impacts associated with the full development of the WSP plan area, are addressed below.

Project-Related Contaminant Sources

As discussed under Impact HAZ-1 above, the construction of the WSP solar projects would involve the use of various hazardous materials such as fuels, lubricants, solvents, and welding supplies, among other things. As required under MM HAZ-1, the transport, use, and disposal of these materials would take place in accordance with Hazardous Materials Business Plans and Storm Water Pollution Prevention Plans that would prescribe safe handling and disposal protocols and set forth emergency procedures to be followed in case of spills or accidental discharges. The implementation of this mitigation measure would ensure that impacts associated with the use of hazardous materials would be less than significant for WSP solar

development. These same requirements would be applicable to the other nearby cumulative projects such that the potential impacts would be less than significant at the project level. The residual hazardous materials impacts from each project would not combine to produce a cumulatively significant effect. Therefore, the cumulative impact due to handling and disposal of hazardous materials would be *less than significant with mitigation.*

Existing Sources of Potential Hazards and Contamination

There are several existing conditions within the WSP plan area that may pose a safety or contamination hazard during construction of the WSP solar projects. These potentially include high concentrations of agricultural pesticides in the soils, the presence of Valley Fever fungal spores in the soils, abandoned oil and gas wells, existing natural gas pipelines and electrical transmission lines. These potential hazards would be mitigated within the WSP plan area through implementation of MM HAZ-2 through MM-HAZ-5. It is expected that any near-term cumulative projects planned in the WSP vicinity would be required to implement similar mitigation measures, as applicable to their sites and projects, such that all potential hazardous materials impacts would be reduced to less-than-significant levels at each project site. The residual health and safety impacts at each project would not combine to produce a cumulatively significant effect. Therefore, the cumulative impact due to existing sources of potential hazards and contamination would be *less than significant with mitigation*.

Hazards to Aviation

As discussed under Impact HAZ-9, the WSP solar development would not include structures tall enough to pose physical obstructions to flight operations at NAS Lemoore or to general aviation in the area. Similarly, the low-reflectivity solar modules and other facilities installed at the WSP site would not result in glare impacts that would disrupt flight operations. Therefore, the safety hazard posed by WSP solar development to aviation would be less than significant. The four other cumulative projects all consist of solar PV generating facilities with very similar physical characteristics to WSP solar development. None of the cumulative projects would include structures tall enough to pose physical obstructions to flight operations, and all of the cumulative project would include low-reflectivity solar modules and thus would not produce glare. Thus the hazards to aviation at each cumulative site, including the WSP plan area, would be less than significant. There is virtually no potential that the less-than-significant hazards to aviation at each cumulative project could combined to produce a cumulatively significant hazard to aviation. Therefore, the cumulative impact in terms of hazard to aviation would be *less than significant*.

Electromagnetic Fields

As discussed under Impact HAZ-6, EMF levels from existing 230-kV transmission facilities passing through the WSP plan area drop of rapidly to background or ambient levels within about 150 feet of the transmission rights-of-way. Although some solar modules and supporting electrical components would be installed within this distance, the overall duration of worker exposure would be brief, and would be well within recommended occupational exposure levels. The other cumulative project sites also have high voltage transmission lines passing through or along their sites. However, these transmission lines are separated by distances of well over 200 feet, such that their EMF emissions would not combine to result in greater worker exposure. Therefore, cumulative impacts associated with EMF emissions would be *less than significant*.

Wildfire Risk

As discussed under Impact HAZ-11, the WSP plan area is not located within or near an area subject to wildland fire risk, as mapped by CalFIRE. a.

The nearby cumulative projects similarly are not located within or near an area subject to wildland fire risk. Therefore, the near-term cumulative wildfire risk would be *less than significant*.

In summary, the near-term cumulative hazards and hazardous materials impacts associated with WSP solar development would be *less than significant with mitigation*.

Far Term

For far-term conditions, the cumulative analysis of hazards and hazardous materials considers the full buildout of land uses within ¼ mile of the WSP site, as shown on the 2035 Kings County General Plan. The 'Kings County Land Use Map' of the Land Use Element shows that all lands within ¼ mile of the outside WSP boundaries are designated as either 'General Agriculture 20 ac.' or 'Exclusive Agriculture 40 ac.' These lands are located well outside existing and planned urbanized areas that include cities (and their spheres of influence), unincorporated communities (including their planning areas), special districts, rancherias, and military bases. Thus it is reasonable to assume that agriculture production will remain the dominant land use in the adjacent and surrounding lands for the life of the General Plan.

It is important to note that, as with the lands of the WSP plan area, the agricultural designations of the 2035 Kings County General Plan allow the installation of utility-scale PV solar generating facilities (KC 2010). Thus it is possible that additional solar development projects could be proposed in the WSP vicinity within the 25 year planning horizon of the General Plan. Since the adjacent lands to the west of the WSP plan area are located within Fresno County, the corresponding General Plan designations for Fresno County lands would guide permitted uses on adjacent lands to the west. Again, all lands within a ¼ radius of the WSP site to the west are designated 'Agriculture' under the Fresno County General Plan (Fresno County 2010). While the Fresno County General Plan does not specifically allow PV solar development on agriculturally-designated lands, the County has initiated a process for considering solar PV development on agriculturally-designated lands, and has approved several solar PV projects under this process (Fresno County 2013). Therefore, it is reasonable to assume that Fresno County would consider proposals for PV solar development on agricultural lands within ¼ mile of the WSP site.

Within the far-term cumulative study area there are several existing potential sources of hazards and hazardous materials that occur within and in the vicinity of the WSP plan area. Although there are no known contamination sites included on hazardous materials lists, apart from those at NAS Lemoore located 2 miles north of WSP, there are existing (abandoned) oil wells, a natural gas transmission pipeline, and two high-voltage power transmission lines within the cumulative study area. There is also the potential that residual pesticides from past agricultural operations may still be present in the soils in hazardous concentrations. Also, any cumulative development could involve the use, handling and transport of hazardous materials. For any WSP solar development that may occur in the far-term, these potential impacts would be mitigated through implementation of MM HAZ-1 through MM HAZ-5. It is expected that any far-term cumulative projects planned in the WSP vicinity would be required to implement similar mitigation measures, as applicable to their sites and projects, such that all potential

hazardous materials impacts would be reduced to less-than-significant levels at each project site. There is virtually no possibility that the residual less-than-significant health and safety risks associated with far-term cumulative projects would combine to produce a cumulatively significant health and safety impact. Therefore, the far-term cumulative impact associated with WSP solar development in terms of hazards and hazardous materials would be *less than significant with mitigation*.

WSP Gen-Tie Corridors

Near Term

Under near-term conditions, there are 3 approved and pending solar projects and two transmission projects on lands in the vicinity of the WSP gen-tie corridors. (Note: The Westside Solar project and Westlands Aquamarine solar project are located within the WSP plan area; since the impacts associated with these projects are covered in the WSP impact analysis, they are not included again in the list of cumulative projects below.) These projects are listed below and shown in Figures PD-10, and described in Section *2.5. Completed, Approved, and Pending Projects/Introduction to Cumulative Impact Analysis*.

- Mustang/Orion/Kent South solar projects
- Central Valley Power Connect transmission project (Gates to Gregg Substation)
- Westside Transmission Project (Gates to Dos Amigos/Los Banos Substation)

Project-Related Contaminant Sources

The construction of the WSP gen-tie projects and the other cumulative projects would involve the use of various hazardous materials such as fuels, lubricants, solvents, and welding supplies, among other things. As required under MM HAZ-1, the transport, use, and disposal of these materials would take place in accordance with construction standards and laws and regulations that would prescribe safe handling and disposal protocols and set forth emergency procedures to be followed in case of spills or accidental discharges. The implementation of this mitigation measure would ensure that impacts associated with the use of hazardous materials would be less than significant for each of the cumulative projects. The residual hazardous materials impacts from each project would not combine to produce a cumulatively significant effect. Therefore, the cumulative impact due to handling and disposal of hazardous materials would be *less than significant with mitigation.*

Existing Sources of Hazards and Contamination

In terms of existing sources of hazards and contamination, there are no reported contamination sites within a half mile of the gen-tie corridors, and there are no reported contamination sites on the cumulative project sites. Given that the major portion of the gen-tie corridors, and most if not all of the cumulative project sites have been in agricultural cultivation, there is a potential for agricultural pesticides to be present in hazardous concentrations. Some of the cumulative project sites are traversed by existing high voltage transmission lines and oil or gas pipelines. The cumulative sites also have the potential to contain Valley Fever fungal spores in the soils. These potential hazards would be mitigated within the WSP plan area through implementation of MM HAZ-2 through MM-HAZ-5. It is expected that any near-term cumulative projects planned in the WSP vicinity would be required to implement similar mitigation measures, as applicable to their sites and projects, such that all potential hazardous materials impacts would be reduced to less-than-significant levels at each project site. The

residual near-term health and safety impacts at each cumulative project would not combine to produce a cumulatively significant effect. Therefore, the cumulative impact due to existing sources of potential hazards and contamination would be *less than significant with mitigation*.

Hazards to Aviation

The WSP gen-tie projects would not include structures tall enough to pose physical obstructions to flight operations in the area. None of the cumulative projects would include structures tall enough to pose physical obstructions to flight operations, and none of the cumulative projects would produce glare. Thus the hazards to aviation from each cumulative project, including the WSP gen-tie projects, would be less than significant. There is virtually no potential that the less-than-significant hazards to aviation at each cumulative project could combine to produce a cumulatively significant hazard to aviation. Therefore, the cumulative impact in terms of hazard to aviation would be *less than significant*.

Electromagnetic Fields

As discussed under Impact HAZ-6, EMF levels from the 230-kV gen-tie facilities would drop off rapidly to background or ambient levels within approximately 150 feet of the transmission rights-of-way. There are several residences located approximately 125-130 feet of the southern WSP gen-tie corridor, but EMF levels at these residences would be well within the range for typical household EMF levels. Although construction workers on the transmission projects would be subject to higher than ambient EMF emissions, the levels would be well within recommended occupational exposure levels.

There are two other transmission projects that include segments that may be constructed adjacent to or near the WSP gen-tie projects. These include the southern segment of the Westside Transmission Project, which would run north from the Gates Substation, and an alternative segment of the Gates to Gregg Transmission Project (Central Valley Power Connect) which would run parallel to the WSP-North to Gates Gen-Tie corridor. These transmission projects would also emit EMFs, while the non-transmission projects would emit negligible or no EMFs. For the two parallel transmission projects, existing dwellings would be at least 200 feet from the transmission right-of-way, so the nearest residents would not be subject to higher than ambient EMF levels. The nearest dwellings would be about 1,100 feet from the parallel segment of Gates to Gregg Transmission Project, and at least 250 feet from the southern segment of the Westside Transmission Project. At these distances, EMF levels would fall back to ambient levels at the nearest residential receptors. The nearest residential receptors that are common to both the WSP gen-tie corridors and another nearby project are located on Gale Avenue east of the San Luis Canal/California Aqueduct. These comprise 6 ranch houses located 0.3 to 0.5 miles from the northern WSP gen-tie corridor, which are also proximate to the Gates to Gregg transmission corridor which would run parallel to the northern WSP gen-tie in this area. At these distances, the combined EMF levels from the two transmission projects would have dropped to approximate ambient levels at the nearest common receptor location. For all transmission projects, worker exposure would be well below recommended occupational exposures. Therefore, cumulative impacts associated with EMF emissions would be *less than significant*.

Wildland Fire Risk

As discussed under Impact HAZ-11, the north gen-tie corridor is subject to moderate wildland fire risk in the vicinity of the California Aqueduct. For the north gen-tie project, this impact would be mitigated through implementation of a fire protection and safety plan, as required in MM HAZ-6. It is expected that any near-term cumulative projects located within or near a wildland fire hazard area would be required to

implement a similar mitigation measure. . The residual wildland fire risk at each project would not combine to produce a cumulatively significant effect. Therefore, the cumulative impact due to wildfire risk would be *less than significant with mitigation*.

In summary, the near-term cumulative hazards and hazardous materials impacts associated with the WSP gen-tie projects would be *less than significant with mitigation*.

Far Term

For far-term conditions, the analysis of cumulative hazards and hazardous materials impacts considers the full buildout of land uses adjacent to and near the WSP gen-tie corridors, as shown in the general plans of the Kings County and Fresno County. Under both general plans, the predominant land use planned in the vicinity of the WSP gen-tie corridors is agricultural. Thus it is reasonable to assume that agricultural production will remain the dominant land use on the adjacent and surrounding lands for the life of the general plans. There is the potential for additional solar and transmission projects to be proposed and planned along the transmission route over the next 20 years, although the precise location and nature of such projects is currently unforeseeable.

Within the far-term cumulative study area there are several existing potential sources of hazards and hazardous materials as occur in the vicinity of the WSP gen-tie corridors. Although there are no known contamination sites included on hazardous materials lists, there are existing (abandoned) oil wells, natural gas and petroleum transmission pipelines, and several high-voltage power transmission lines within the cumulative study area. There is also the potential that residual pesticides from past agricultural operations may still be present in the soils in hazardous concentrations. Also, any far-term cumulative development could involve the use, handling and transport of hazardous materials, and could also be located within a wildlife fire hazard area. At any far-term cumulative projects, it is expected that these potential impacts would be mitigated through implementation mitigation measures similar to of MM HAZ-1 through MM HAZ-6 applicable to the WSP gen-tie projects. There is virtually no possibility that the less-than-significant residual health and safety risks associated with far-term cumulative projects would combine to produce a cumulatively significant health and safety impact. Therefore, the far-term cumulative impact associated with WSP gen-tie projects in terms of hazards and hazardous materials would be *less than significant with mitigation*.

Mitigation Measures:

***Westlands Solar Park*. Implement MM HAZ-1 through HAZ-5. No additional mitigation is required.**

***WSP Gen-Tie Corridors*. Implement MM HAZ-1 through HAZ-6. No additional mitigation is required.**

REFERENCES/BIBLIOGRAPHY – HAZARDS AND HAZARDOUS MATERIALS

CalFire 2007a — California Department of Forestry and Fire Protection (CalFire). 2007. Draft *Fire Severity Zones in LRA – Fresno County* (map). September. http://frap.fire.ca.gov/webdata/maps/fresno/fhszl06_1_map.10.pdf

CalFire 2007b — California Department of Forestry and Fire Protection (CalFire). 2007. *Draft Fire Severity Zones in LRA – Kings County* (map). September. http://frap.fire.ca.gov/webdata/maps/kings/fhszl06_1_map.16.pdf

CDC 2014 — Centers for Disease Control. 2013. *Fungal Diseases – Valley Fever (Coccidioidomycosis)*. July. http://www.cdc.gov/fungal/diseases/coccidioidomycosis/index.html

CDE 2012 — California Department of Education (CDE). *Title 5, California Code of Regulations. School Facilities Construction. Article 2. School Sites; Section 14010. Standards for School Site Selection*. http://www.cde.ca.gov/ls/fa/sf/title5regs.asp

CDIR 2016 — California Department of Industrial Relations, Division of Occupational Health and Safety (Cal/OSHA). 2016. *Notable Citations Issued*. http://www.dir.ca.gov/dosh/citation.html

CDPH 2013a — California Department of Public Health (CDPH). 2013. *Preventing Work-Related Coccidioidomycosis (Valley Fever)*. June. http://www.cdph.ca.gov/programs/hesis/Documents/CocciFact.pdf.

CDPH 2013b — California Department of Public Health (CDPH). 2013. *Valley Fever Fact Sheet*. September. http://www.cdph.ca.gov/HealthInfo/discond/Documents/VFGeneral.pdf

CPUC 1993 — California Public Utilities Commission (CPUC). 1993. *Order Instituting Investigation on the Commission's own motion to develop policies and procedures for addressing the potential health effects of electric and magnetic fields of utility facilities*. Decision No. 93-11-013, Investigation No. 91-01-012. Available at http://www.cpuc.ca.gov/Environment/emf/emfopen.htm

CPUC 1994 — California Public Utilities Commission (CPUC). 1994. *General Order No. 131-D. Rules relating to the Planning and Construction of Electric Generation, Transmission/Power/Distribution Line Facilities and Substations Located in California*. Decision 94-06-014, adopted June 8, 1994, as modified. http://162.15.7.24/PUBLISHED/Graphics/589.PDF

CPUC 2012a — California Public Utilities Commission (CPUC). 2012. *General Order 95 - Rules for Overhead Electric Line Construction*. As revised January 12, 2012 http://www.cpuc.ca.gov/Environment/emf/emfopen.htm

CPUC 2012b — California Public Utilities Commission (CPUC). 2012. *CPUC Website - CPUC EMF Policy*. http://www.cpuc.ca.gov/Environment/emf/emfopen.htm

DOGGR 2001 — California Department of Conservation (DOC), Division of Oil, Gas, and Geothermal Resources. 2001. *Oil, Gas, and Geothermal Fields in California 2001* (map). ftp://ftp.consrv.ca.gov/pub/oil/maps/Map_S-1.pdf

DOGGR 2003 — California Department of Conservation (DOC), Division of Oil, Gas, and Geothermal Resources. 2003. *Oil, Gas & Geothermal – District 5 Maps*. http://www.conservation.ca.gov/dog/maps/Pages/d5_index_map1.aspx

DOGGR 2017 — California Department of Conservation (DOC), Division of Oil, Gas, and Geothermal Resources (DOGGR). 2017. *Division of Oil, Gas and Geothermal Resources Well Finder*. http://maps.conservation.ca.gov/doggr/index.html#close

DHS 1999 — California Department of Health Services (DHS). 1999. *Short Fact Sheet on EMF*. http://sfpl.org/pdf/about/commission/emffactsheet040104.pdf

DTSC 2008 — California Department of Toxic Substances Control (DTSC). 2008. *Interim Guidance for Sampling Agricultural Properties* (Third Revision). http://www.energy.ca.gov/sitingcases/palmdale/documents/2011-02-02_Exhibits_FSA_TN-59585.pdf

DTSC 2012 — California Department of Toxic Substances Control (DTSC). 2012. *Initial Statement of Reasons – Standards for the Management of Hazardous Waste Solar Modules*. August. https://dtsc.ca.gov/LawsRegsPolicies/Regs/upload/ISOR-080112.pdf

DTSC 2017 — California Department of Toxic Substances Control (DTSC). 2016. *Hazardous Waste and Substances List – Site Cleanup (Cortese List) – EnviroStor Database*. http://www.envirostor.dtsc.ca.gov/public

FAA 2010 — Federal Aviation Administration. 2010. *Technical Guidance for Evaluating Selected Solar Technologies on Airports*. November. http://www.faa.gov/airports/environmental/policy_guidance/media/airport-solar-guide.pdf

First Solar 2016 — First Solar, Inc. 2016. *First Solar Recycling Services*. http://firstsolar.com/en/technologies-and-capabilities/recycling-services

Fraunhofer 2010 — Fraunhofer Institute. 2010. Scientific Comment of Fraunhofer to Life Cycle Assessment of CdTe Photovoltaics. June. http://www.en.csp.fraunhofer.de/press-and-events/details/id/852/

Fthenakis 2003 — Fthenakis, Vasilis, and Ken Sweibel. 2003. *CdTe PV: Real and Perceived EHS Risks*. ND. https://www.bnl.gov/pv/files/pdf/art_166.pdf

Hannigan 2013 — Hannigan, James, P.E. 2013. "Effects of Electrical and Magnetic Fields on Transmission Line Design." *Electric Energy T&D Magazine*. June. http://electricenergyonline.com/show_article.php?mag=89&article=718

Lavey 2014 — Lavey, Stephanie, APEX Companies LLC. 2014. *Phase I Dilemma – Evaluating Historic Use of Pesticides and Herbicides as a Recognized Environmental Condition*. http://www.apexenv.com/blog/183-phase-i-dilemma-%E2%80%93-evaluating-historic-use-of-pesticides-and-herbicides-as-a-recognized-environmental-condition

Jager-Waldau 2006 — Jager-Waldau, Arnulf; European Commission, Institute for Environment and Sustainability, Renewable Energies Unit. 2006. *Summary Report – Peer Review of Major Published Studies on the Environmental Profile of Cadmium Telluride (CdTe) Photovoltaic (PV) Systems*. March.

JLUSPC 2011 — Naval Air Station Lemoore Joint Land Use Study Policy Committee, 2011. *NAS Lemoore Joint Land Use Study – Final Release*. August 30. http://www.kingscog.org/index.asp?SEC=1E7B4327-327C-4971-85B4-05AF6F18D22A&Type=B_LIST

Kings County 2009a — Kings County. 2009. *Draft Air Quality Element Background Report, County of Kings, California.* February. http://www.countyofkings.com/home/showdocument?id=3138

Kings County 2010 — Kings County. 2010. *2035 Kings County General Plan*. Adopted January 26, 2010. http://www.countyofkings.com/departments/community-development-agency/information/2035-general-plan

Kings County 2016 — Kings County. 2016. *Kings County Development Code. Kings County Code of Ordinances, Appendix A - Ordinance No. 668.12*. Dated January 26, 2016; Effective February 26, 2016. http://www.countyofkings.com/home/showdocument?id=12535

MTA 2011 — Moore Twinning Associates (MTA). 2011. *Phase I Environmental Site Assessment, Proposed Westside Solar Park, Assessor's Parcel Numbers (APNs) 026-300-032, 026-300-033, 026-300-038, 026-300-043, 026-320-002, 026-320-003, 026-320-017, and 026-320-020, Lemoore, California.* April. [Available for review at Westlands Water District headquarters in Fresno.]

MTA 2015 — Moore Twinning Associates (MTA). 2015. *Environmental Assessment of Soils for Arsenic and Environmentally Persistent Pesticides (OCPs); Westside Solar Project – Northern 18 acres, Southeast Corner of Avenal Cutoff Road and 25th Avenue, Lemoore, California.* February. [Available for review at Westlands Water District headquarters in Fresno.]

MTA 2016 — Moore Twinning Associates (MTA). 2016. *Phase I Environmental Records Review, Westlands Solar Park, Stratford, Kings County, California.* January. [Available for review at Westlands Water District headquarters in Fresno.]

NIEHS 2002 — National Institute of Environmental Health Sciences (NIEHS), National Institutes of Health (NIH). 2002. EMF - *Electric and Magnetic Fields Associated with the Use of Electric Power*. June. http://www.niehs.nih.gov/health/materials/electric_and_magnetic_fields_associated_with_the_use_of_electric_power_questions_and_answers_english_508.pdf

S2S 2016 — Sierra2theSea. 2016. "Solar Keeps on Shining in Kings County." July 13. http://sierra2thesea.net/central-valley/around-kings-county-solar-shines-corcoran-hospital-sale

SoCalGas 2016 — Southern California Gas Company (SoCalGas). 2016. *Locate and Mark Transmission Lines Video*. ND. https://www.socalgas.com/newsroom/video-library

Sunpower 2011 — Sunpower Corporation. 2011. *PV Systems: Low Levels of Glare and Reflectances vs. Surrounding Environment*. https://us.sunpower.com/sites/sunpower/files/media-library/white-papers/wp-pv-systems-low-levels-glare-reflectance-vs-surrounding-environment.pdf

SWRCB 2016 — State Water Resources Control Board (SWRCB). 2016. *GeoTracker Database*. http://geotracker.waterboards.ca.gov/

UCD 2016 — University of California-Davis (UCD) et al. 2016. *Extoxnet – Pesticide Information Profiles (PIPs)*. http://extoxnet.orst.edu/pips/ghindex.html

US EPA 2000 — U.S. Environmental Protection Agency (US EPA). 2000. *Cadmium Compounds – Hazard Summary.* Created in April 1993; Revised in January 2000. http://www.epa.gov/ttn/atw/hlthef/cadmium.html

3.8. HYDROLOGY and WATER QUALITY

3.8.1. ENVIRONMENTAL SETTING

Westlands Solar Park and WSP Gen-Tie Corridors

Climate and Rainfall

The climate at the WSP and gen-tie corridors area is characterized by hot dry summers and cool, mild winters, and relatively low humidity. Summers are hot and dry with average high temperatures in the upper 90s and lows in the high 50s. The winters tend to be foggy and cool, with average highs in the mid-50s and average lows in the mid-30s. Rainfall occurs primarily in the winter months between October and May, and average annual rainfall is about 8 inches.

Regional and Local Drainage

The WSP and gen-tie corridors area is located on the floor of the San Joaquin Valley which receives drainage flows from the Sierra Nevada to the east and the Diablo Range, one of the Coast Ranges, from the west.

To the west of the WSP plan area several streams that originate in the Diablo Range and flow toward the valley floor. These creeks generally terminate at the California Aqueduct which follows the foot of the alluvial fans in a general northwest to southeast heading. The nearest creek originating from the west is the Los Gatos Creek system, which terminates at a large detention basin just north of the City of Huron located approximately 9 miles west of the WSP plan area, and about 3 miles northwest of the northern gen-tie corridor. In the WSP vicinity, no natural drainage flows extend eastward beyond the California Aqueduct, which is located 2 miles west of the WSP plan area at the nearest point. Likewise, no natural drainage courses pass through the gen-tie corridors vicinity.

On the east side of the valley, drainage flows from the Sierra Nevada are conveyed by an extensive network of rivers and streams into the San Joaquin Valley. While streams and rivers to the north of Fresno ultimately flow out to the Pacific Ocean, 3 of the 4 major rivers of the southern Sierra: the Kings, Kaweah, and Tule, as well as a number of lesser streams all drain west into the Tulare Lake Bed which has no outlet to the ocean. The southern-most river - the Kern River - historically flowed to the Buena Vista Lake Bed at the southern end of the San Joaquin Valley. These rivers and creeks historically formed broad deltaic fans as they emerged from the foothills, and branched out as they emerged from the Sierra foothills to form distributary systems that spread out over the alluvial fans. Since the Tulare Basin is the topographical low point in the WSP vicinity, the distributary channels historically converged at Tulare Lake. The water courses flowed undammed toward the Tulare Basin in dozens of channels and sloughs that shifted periodically during flood events. During particularly wet years, Tulare Lake could expand to over 800 square miles, and in the event of extreme rainfall and flooding, the surface water reach elevations where it began to flow north into Fresno Slough and ultimately to the San Joaquin River. Beginning the mid-1800s, settlers began building canals and diversion structures to redirect

surface water for irrigation of agricultural lands. Irrigation infrastructure constructed upstream from Tulare Lake slowly cut off the lake from its source waters and it began to shrink, and by the end of the century it had all but disappeared. The lakebed was converted to agriculture with levee construction and the formation of reclamation districts. During extremely wet years, the Tulare Basin will flood to form a temporary lake feature, but water elevations have remained below the level where flows would be released to Fresno Slough to the north. In recent times, Tulare Lake has flooded in 1969, 1983, and 1997 (Austin 2012).

The dry Tulare Lake bed is bounded on the west and northwest by a major perimeter canal, known as Blakely Canal, which runs along the southeast side of State Route 41 at a distance of about ½ mile from the southeasterly WSP boundary. The Lower Kings River runs parallel to northeastern WSP boundary and passes within approximately 1.3 miles of the plan area at its nearest point. Since flows from the Sierra in this region flow into the Tulare Lake Basin or are intercepted by the Kings River or Blakely Canal, no drainage flows enter the WSP plan area from the east.

Drainage of the WSP and Gen-Tie Corridors Area

There are no natural surface drainage features within the WSP plan area or in the immediate vicinity. As discussed above, the farthest westward extent of the creeks, rivers and sloughs carrying Sierra runoff is the low point formed by the Tulare Lake bed and Kings River to the east. Creeks originating in the Coast Ranges terminate west of the California Aqueduct to the west of the WSP plan area. The surface water features closest to the WSP include the Empire Westside Canal, which is near the southeast WSP boundary. Just northeast of the plan area is a series of sewage treatment and stormwater retention basins that occupy approximately 275 acres. These effluent and evaporation basins are owned and operated by the Naval Air Station Lemoore.

The WSP plan area is currently served by Westlands Water District's delivery system and a series of privately owned and operated interconnected irrigation canals and ditches, as well as drainage ditches and ponds. The irrigation canals and ditches convey and distribute imported surface water and pumped well water throughout the plan area. The irrigation drainage water, also known as irrigation return flow or tailwater, is collected by drainage ditches and conveyed to small basins for reuse as irrigation water. Some irrigation return flows are conveyed to an artificial tailwater pond located just outside the WSP plan area north of Nevada Avenue, where the water evaporates or percolates into the soil. There is no drainage outlet from the WSP plan area.

The topography of the WSP plan area descends very gradually to the east, with ground elevations ranging from 280 feet AMSL on the west boundary to 205 feet AMSL on the east boundary, a distance of 8 miles. This represents an elevation change of 10 feet per mile, or an average slope of 0.2 percent. During the rainy season, stormwater percolates directly into the soil or is captured by the system of agricultural canals and ditches. Surface runoff of stormwater is negligible.

The WSP Gen-Tie Corridors pass through the drainage area of Arroyo Pasajero (also known as the "Los Gatos Creek System), which encompasses the largest drainage area in the western San Joaquin Valley. The major creeks in the system include Arroyo Pasajero and its tributaries Warthan, Jacalitos, and Zapato-Chino Creeks. Arroyo Pasajero flows through the City of Coalinga and Pleasant Valley and then

passes under I-5 between El Dorado and Jayne Avenues. Water from Arroyo Pasajero is collected in a large detention basin on the west side of the California Aqueduct north of the City of Huron.

Surface Water Quality

Under the federal Clean Water Act Section 303(d), the California State Water Resources Control Board (SWRCB) is required to identify water bodies that do not meet water quality standards. In the vicinity of the WSP plan area, the listed "Impaired Water Body," and the pollutants causing the impairment are as follows:

- Lower Kings River (36-mile segment from Island Weir to Stinson and Empire Weirs) – electrical conductivity (salinity), molybdenum, toxaphane (SWRCB 2010).

This reach of the Kings River runs from north to south approximately 2 miles east of the WSP plan area. The WSP plan area neither drains into the Kings River nor is subject to overbank flooding from the Kings River, which is at least 10 feet lower in elevation than the nearest part of the WSP plan area.

Flooding Potential

According to the Flood Insurance Rate Maps (FIRM) covering Kings County, the WSP plan area lies entirely outside both the 100-year and 500-year flood zones designated by the Federal Emergency Management Agency (FEMA)(See Figure HYD-1). The nearest FEMA-designated flood-prone areas occur to the west in Fresno County, to the east along the Kings River, to the southeast within the Tulare Lakebed, and to the south along the California Aqueduct (FEMA 2009b).

In 2007, the California Department of Water Resources (DWR) completed its Awareness Floodplain Mapping for Kings County which identifies flood hazard areas ("Special Flood Zones") that are not mapped under FEMA's program. There are two small areas within the WSP plan area which are mapped as lying within the Special Flood Zone area. The first area, located in the southern tip of the WSP plan area, encompasses approximately 300 acres along an ephemeral drainage that runs from northwest to southwest toward SR-41 and the Tulare Lakebed. The second area, located along the eastern boundary of the WSP plan area, comprises an area of approximately 100 acres. (The DWR-mapped flood zones are shown on Figure HS-6 in the Health and Safety Element of the Kings County 2035 General Plan.) The DWR Awareness Floodplain Maps are not regulatory floodplain maps but are intended to provide additional understanding of potential flood hazards that are not currently mapped by FEMA (DWR 2016).

The major and minor stream systems that enter the west side of the valley from the Diablo Range are prone to high flows that result in localized flooding throughout the area. The areas subject to flooding during the 100-year event are shown in Figure HYD-1. Heavy flows from Arroyo Pasajero can result in flooding in downstream communities of Coalinga and Huron. Apart from flooding of agricultural lands, the major facilities such as I-5 and the California Aqueduct are also subject to potential flooding.

As mentioned, flood water from Arroyo Pasajero is collected downstream in a large detention basin on the west side of the California Aqueduct north of the City of Huron. Due to high sediment volumes, the storage capacity of the basin diminished over time and flood flows would enter the aqueduct.

Arroyo Pasajero also carries asbestos from an abandoned asbestos mill in Coalinga, and during high flows, asbestos would enter the aqueduct. In 2004, DWR enlarged the detention basin to increase its holding capacity during flooding (US EPA 2016).

During major flood events, there is potential for Arroyo Pasajero flows to cause physical damage to the I-5. During a major storm in 1995, flood flows in Arroyo Pasajero washed out the twin bridges on I-5, which were replaced with bridges that could accommodate larger stream flows. Extensive riprap channel protection was also added to prevent scouring around the bridge foundations (Fresno County 2000a).

Inundation Potential Due to Dam Failure

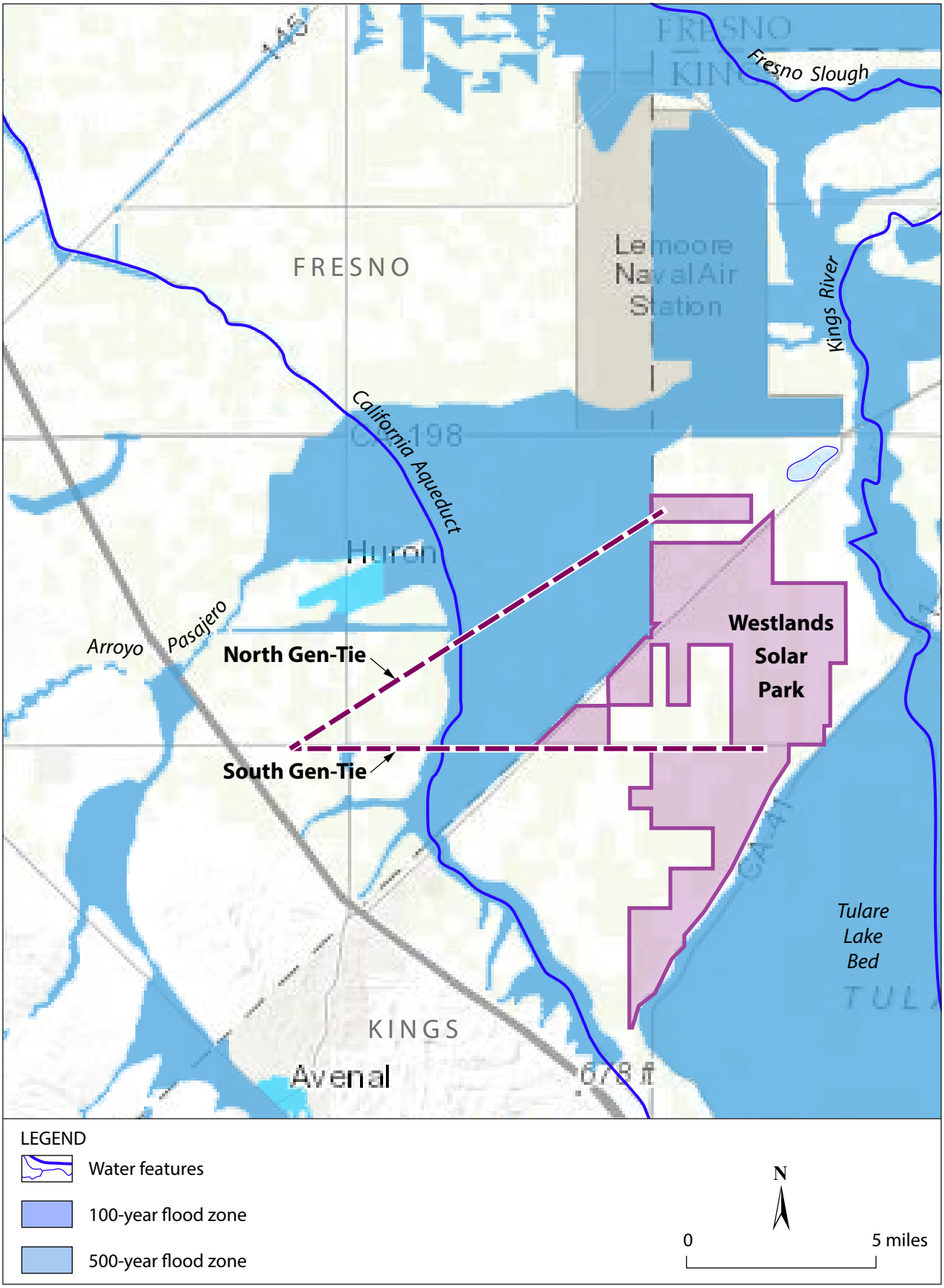
Some portions of Kings County located to the east and northeast of the WSP plan area are subject to potential inundation in the event of the failure of dams located in the Sierra Nevada. According to maps prepared by the U.S. Army Corps of Engineers, the failure of the Pine Flat Dam, located upstream on the Kings River, would result in a potential inundation that could extend as far west as Stratford and the City of Lemoore, but would stop short of the eastern WSP boundary. A failure of the Terminus Dam on the Kaweah River would inundate an area extending to a point just east of the City of Hanford, or more than 10 miles east of the WSP plan area. If Pine Flat Dam failed while at full capacity, its floodwaters would arrive in Kings County within approximately five hours. If Terminus Dam failed while at full capacity, its floodwaters would arrive in Kings County within approximately 12 hours. The chances of any of these dams failing while at full capacity are considered remote. (The mapped inundation areas are shown on Figure HS-7 in the Health and Safety Element of the Kings County 2035 General Plan.) According to the Army Corps of Engineers inundation maps, the failure of Success Dam on the Tule River would not affect Kings County. Pine Flat and Terminus are the only dams in the region which, if breached, might cause flooding of significance to local inhabited areas (see Figure HS-7). In summary, the WSP plan area is not located within the mapped inundation areas for any of the reservoirs in the region, and therefore would not be subject to risk of flooding in the unlikely event of dam failure. There are no nearby reservoirs in the Diablo Range with the potential to inundate the WSP or the gen-tie corridors.

Groundwater

The San Joaquin Valley is underlain by deep water-bearing alluvial deposits. For planning purposes, the California Department Water Resources (DWR) divides the valley into groundwater basins and subbasins. The WSP plan area is located within the Westside Subbasin of the San Joaquin Groundwater Basin. The boundaries of the Westside Subbasin correspond closely with the boundaries of the Westlands Water District.

The Westside Subbasin consists of two main water-bearing zones, an upper and a lower zone, separated by several clay layers, the deepest of which is the impervious Corcoran Clay formation. The Corcoran clay layer ranges in thickness from 20 to 200 feet, and occurs at depths of 200 to 800 feet, depending on location. The Corcoran Clay divides the groundwater system into two major aquifers – lower aquifer and upper aquifer.

Groundwater quality typically varies with depth, with the poorer quality (more saline) water present in the upper and lower limits of the basin, and optimum quality somewhere in between. The base of fresh water is defined as the level at which total dissolved solids (TDS or salts) exceeds 3,000 parts per million.



Source: FEMA, 2009

Surface Hydrology

Figure HYD-1

This page intentionally left blank

The depth to the base of fresh water varies substantially throughout the subbasin, ranging from a depth of 800 feet to 3,500 feet, below ground surface. Within the WSP plan area, the base of fresh water is 2,000 to 2,400 feet below the ground surface (WWD 2013)

Within Westlands Water District, the primary source of irrigation water is from surface water deliveries provided by the U.S. Bureau of Reclamation from the Central Valley Project (CVP) facilities that convey captured Sierra snowmelt to the west side of the San Joaquin Valley. Groundwater is used to augment surface supplies, and during the 30-year period from 1988 to 2017, the annual groundwater withdrawals within the District averaged 273,000 acre-feet per year, or about 0.48 acre-feet per irrigable acre (WWD 2017). However, the volume of groundwater pumping varies substantially from year to year depending on availability of CVP surface water deliveries. For example, in 2006 and 2017, the latest years WWD received 100 percent of its CVP water allocation, the annual volume of groundwater pumped averaged 28,500 acre-feet over the two years, representing a small portion of overall annual irrigation requirement of about 1.5 million acre-feet District-wide. During years of severe drought, like the recent drought of 2012 through 2016, groundwater pumping increases to make up for shortfalls of surface water deliveries. During those five drought years, WWD growers received an average of 13 percent of CVP surface water deliveries, and total groundwater pumping within the District averaged 586,000 acre-feet per year, or slightly more than 1.0 acre-foot per irrigable acre. From 2012 to 2014, the groundwater elevations in the lower (sub-Corcoran) aquifer dropped by as much as 400 feet (WWD 2013, 2015, 2016, 2017; DWR 2003).

3.8.2. REGULATORY SETTING

Federal

Clean Water Act

The Clean Water Act (CWA) was enacted with the primary purpose of restoring and maintaining the chemical, physical, and biological integrity of the Nation's waters. The CWA directs states to establish water quality standards for all "waters of the United States" and to review and update such standards on a triennial basis. Other provisions of the CWA relate to basin planning including Section 208, which authorizes the preparation of waste treatment management plans, and Section 319, which mandates specific actions for the control of pollution from non-point sources. Section 303 requires states to adopt water quality standards for all surface waters of the U.S. Standards are based on the designated beneficial use(s) of the water body. Where multiple uses exist, water quality standards must protect the most sensitive use. Section 402 mandates that certain types of construction activity comply with the requirements of Environmental Protection Agency's National Pollution Discharge Elimination System (NPDES) stormwater program. The U.S. Environmental Protection Agency (USEPA) has delegated responsibility for implementation of portions of the CWA, including water quality control planning and control programs, such as the NPDES Program, to the State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Board (RWQCB). Construction activities that disturb one or more acres of land must obtain coverage under the NPDES general construction activity stormwater permit, which is issued by Central Valley Regional Water Quality Control Board (RWQCB) (see detailed discussion on NPDES permit requirements below).

Under Section 404 of the Clean Water Act, the U.S. Army Corps of Engineers regulates the filling or grading of "waters of the U.S." (i.e., jurisdictional waters) and associated wetland resources. (See Section *3.4. Biological Resources* for a full description of Section 404 and related regulatory requirements.)

National Flood Insurance Program

The Federal Emergency Management Agency (FEMA) administers the National Flood Insurance Program (NFIP) to provide subsidized flood insurance to communities complying with FEMA regulations that limit development in floodplains. FEMA issues flood insurance rate maps for communities participating in the NFIP. These maps delineate flood hazard zones in the community. Executive Order 11988 (Floodplain Management) addresses floodplain issues related to public safety, conservation, and economics. It requires (1) avoidance of incompatible floodplain development, (2) consistency with the standards and criteria of the NFIP, and (3) restoration and preservation of the natural and beneficial floodplain values. (See "Local" below for further discussion of flood regulations.)

State

Porter-Cologne Water Quality Control Act

Adopted in 1969, the Porter-Cologne Act is California's comprehensive water quality law, establishing an extensive regulatory program and planning and management functions to protect water quality and beneficial uses of the state's water. It established the State Water Resources Control Board and the nine Regional Boards, whose primary responsibility is the development and implementation of Basin Plans (or Water Quality Control Plans). Pursuant to the authority delegated under CWA Section 303, the Regional Boards issue NPDES discharge permits and Waste Discharge Requirements (WDRs) to municipal wastewater treatment plants and industrial dischargers.

Central Valley Regional Water Quality Control Board

In southern San Joaquin Valley, the state water quality standards are regulated by the Central Valley Regional Water Quality Control Board (CVRWQCB or Regional Board). As noted above, the Regional Board establishes beneficial uses and water quality objectives for surface water and groundwater resources the region through the Tulare Lake Basin Plan. The Regional Board also implements Clean Water Act (CWA) Section 303(d) total maximum daily load (TMDL) process, which consists of identifying candidate water bodies where water quality is impaired or limited by the presence of pollutants. The TMDL process is implemented to determine the assimilative capacity of the water body for the pollutants of concern and to establish equitable allocation of allowable pollutant loading within the watershed.

CWA Section 401 requires an applicant pursuing a federal permit to conduct any activity that may result in a discharge of a pollutant to obtain a water quality certification (or waiver) from the applicable RWQCB. The RWQCBs primarily implement basin plan policies through issuing waste discharge requirements for waste discharges to land and water. The RWQCBs have also been delegated responsibility for administering the NPDES permit program, which is designed to manage and monitor point and nonpoint source pollution.

NPDES General Permit for Discharges of Storm Water Associated with Construction Activity

As noted above, the portion of the NPDES program that regulates stormwater discharges associated with construction activities applies to construction sites which disturb over one acre. The NPDES General Permit for Discharges of Storm Water Associated with Construction Activity applies to all of California. Since the proposed project would disturb more than 1 acre of land, the project will be subject to the General Permit for stormwater discharges. Administration of the General Permit has not been delegated to cities, counties, or Regional Boards but remains with the State Board. Enforcement of permit conditions, however, is the responsibility of Regional Board staff, assisted by local municipal or county staff. Prior to construction grading for a project, applicants are required to file a "Notice of Intent" (NOI) with the State Board to comply with the General Permit and prepare and implement a Storm Water Pollution Prevention Plan (SWPPP) which addresses measures to be included in the project to minimize and control runoff during and after construction. The SWPPP is required to specify the site-specific best management practices (BMPs) to control erosion and sedimentation and discharges of other construction-related pollutants (e.g., petroleum products, solvents, paints, concrete) that could contaminate nearby water resources during the construction phase. The SWPPP is also required to contain a summary of the structural and non-structural BMPs to be implemented during the post-construction period. The SWPPP is to be kept on-site during construction, and is to be updated each year as site development proceeds.

DWR's Awareness Floodplain Mapping Project

The California Department of Water Resources (DWR) initiated the Awareness Floodplain Mapping project in order to identify flood hazard areas for areas that are not mapped under the Federal Emergency Management Agency's (FEMA) National Flood Insurance Program (NFIP) and to provide the community and residents an additional tool in understanding potential flood hazards currently not mapped as a regulated floodplain. The awareness maps identify the 100-year flood hazard areas using approximate assessment procedures. These floodplains are shown simply as flood prone areas without specific depths and other flood hazard data. These maps are not FEMA regulatory floodplain maps; however, at the request of the community, FEMA would include this data on their maps (DWR 2016).

Sustainable Groundwater Management Act

In September 2014, Governor Brown signed the Sustainable Groundwater Management Act (SGMA). The goal of the legislation is to sustainability manage California's groundwater basins identified as medium to critically over drafted subbasin. SGMA required that all medium to critically over drafted subbasins identified by DWR are managed by a groundwater sustainability agency (GSA). The GSA is responsible for locally managing the groundwater subbasin through the development and implementation a Groundwater Sustainability Plan (GSP). Medium and high priority groundwater subbasins are required to submit their GSP by 2022 and critically overdrafted subbasin are required to submit their GSP by 2020. As the primary water purveyor and local agency overlying the Westside Subbasin, Westlands Water District is the designated GSA for the subbasin. DWR designated the Westside Subbasin as a critically overdrafted basin which requires WWD to prepare a by January 31, 2020.

Westlands Water District

The Westlands Water District provides agricultural irrigation water to the WSP plan area from surface water deliveries provided by the U.S. Bureau of Reclamation from the Central Valley Project (CVP) facilities that convey captured Northern Sierra snowmelt to the west side of the San Joaquin Valley. WWD water users conjunctively use surface water and groundwater, and quantities vary depending on the surface water allocation from the CVP's South of Delta agricultural allocation. Groundwater is pumped by water users within WWD to augment surface supplies. In an ongoing effort to adapt to surface supply shortages, and to reduce groundwater overpumping, WWD provides funding for education and technology, enabling growers to effectively utilize surface water allotments through efficiencies. The District also monitors the water quality and quantity of pumped groundwater as part of its Water Management Plan (WWD 2013).

A key component of the District's Water Management Plan is water conservation. This program consists of the following elements.

- Irrigation Guide for water requirements per crop
- Water Conservation and Management Handbook
- Workshops and meetings on water management information
- Technical assistance and conservation computer programs
- Meter repair and update program
- Groundwater monitoring
- Pump efficiency tests
- Conjunctive use of supplies
- Irrigation System Improvement Program
- Satellite imagery purchased about once every two weeks

As the primary water purveyor in the DWR-designated critically overdrafted Westside Subbasin, WWD is serving as the GSA for the subbasin, effective November 1, 2016, pursuant to SGMA (described above).

Kings County

Kings County General Plan

The 2035 Kings County General Plan contains the following policies related to hydrology and water quality that are relevant to the proposed project:

Resource Conservation Element

A. Water Resources

RC Policy A1.4.1: Evaluate proposed land uses and development projects for their potential to create surface and groundwater contamination from point and non-point sources. Confer with other appropriate agencies, as necessary, to assure adequate water quality review to prevent soil erosion; direct discharge of potentially harmful substances; ground leaching from storage of raw

materials, petroleum products or waste; floating debris; and runoff from the site.

RC Policy A1.4.2: Monitor and enforce provisions to control water pollution contained in the U.S. EPA National Pollutant Discharge Elimination System (NPDES) program as implemented by the California Water Quality Control Board, Central Valley Region.

RC Policy A1.4.3: Require the use of feasible and cost-effective BMPs and other measures designed to protect surface water and groundwater from the adverse effects of construction activities and urban and agricultural runoff in coordination with the California Water Quality Control Board, Central Valley Region.

RC Policy A1.4.4: Encourage and support the identification of degraded surface water and groundwater resources and promote restoration where appropriate.

Health and Safety Element

A. Natural Hazards

HS Policy A4.1.1: Review new development proposals against current Federal Emergency Management Agency (FEMA) digital flood insurance rate maps and California Department of Water Resource special flood hazard maps to determine project site susceptibility to flood hazard.

HS Policy A4.1.2: Reserve FEMA designated flood hazard areas for agricultural and natural resource conservation uses along the floodway channels and Tulare Lake Basin.

HS Policy A4.1.3: Determine base flood elevations for new development proposals within or adjacent to 100 year flood zone areas as identified in latest FEMA Digital Flood Insurance Rate Map, to definitively assess the extent of property potentially subject to onsite flood hazards and risks.

HS Policy A4.1.4: Direct new urban growth to existing cities and community districts, or away from New Community Discouragement Areas to avoid flood hazard areas and increased risk to people and property.

HS Policy A4.1.5: Regulate development, water diversion, vegetation removal, and grading to minimize any increase in flood damage to people and property.

HS Policy A4.1.6: New development shall provide onsite drainage or contribute towards their fair share cost of off-site drainage facilities to handle surface runoff.

HS Policy A4.1.7: Consider and identify all areas subject to flooding in the review of all land divisions and development projects.

HS Policy A4.1.8: Enforce the "Kings County Flood Damage Prevention Ordinance," Chapter 5A of the Kings County Code of Ordinances.

Kings County Code of Ordinances

Kings County Flood Damage Prevention Ordinance

Kings County maintains a floodplain management program which is implemented through the County's *Flood Damage Prevention Ordinance* (Chapter 5A of the Kings County Code of Ordinances). The purpose of this ordinance is to ensure that proposed development is constructed to prevent flood damage, and to ensure that development in those areas can avoid or withstand flooding without increasing flood risk elsewhere. Flood prevention and control in community districts and urban fringe areas are most effectively deterred by structural means such as curbs, gutters and storm drainage systems. In more rural and less developed Agriculture and Open Space areas, more passive measures are relied upon such as high crowns on roadway pavement to divert floodwaters onto adjacent properties that are more suited to accommodate the diverted drainage.

Kings County Improvement Standards

The Kings County Improvements Standards serves as an engineering reference for Kings County staff and private parties in the design and construction of improvements for public works projects and private development improvements. The standards include engineering design specifications for the construction of streets, water supply systems, storm drainage, and sewage disposal.

Fresno County

Since no portion of the Westlands Solar Park is located within Fresno County, the County's plans, policies and regulations are not applicable to WSP solar development. Transmission projects that are to be constructed or co-sponsored by an investor-owned utility (IOU) such as PG&E are subject to the sole permitting jurisdiction of the California Public Utilities Commission (CPUC) and are exempt from local jurisdiction. However, CPUC General Order 131-D requires public utilities to coordinate with local jurisdictions regarding consistency of their projects with local plans and policies (CPUC 1994). Transmission lines that may be privately owned (such as gen-ties) are not under CPUC jurisdiction, and thus are subject to Fresno County jurisdiction and may require the issuance of a conditional use permit from the County.

Fresno County General Plan

The Health and Safety Element of the Fresno County General Plan contains several relevant policies related to Flood Hazards. In general, these policies require compliance with FEMA requirements pertaining to development within flood-prone areas, and that new development not increase flood hazards to other property. The Health and Safety Element is directly accessible at the following web address:
http://www2.co.fresno.ca.us/4510/4360/General_Plan/GP_Final_policy_doc/Health%20Element_rj.pdf

The Open Space and Conservation Element of the Fresno County General Plan contains several relevant policies related to water quality. In general, these policies require new development to minimize erosion, sedimentation, and release of pollutants in order to protect water quality. The Open Space and Conservation Element is directly accessible at the following web address: http://www2.co.fresno.ca.us/4510/4360/General_Plan/GP_Final_policy_doc/Open_Space_Element_rj.pdf

Fresno County Ordinance Code

The Fresno County Ordinance Code, Chapter 15.48 – Flood Hazard Areas, provides regulations for flood hazard reduction for new construction within flood-prone areas as defined in FEMA flood mapping. Ordinance Code Title 17 – Divisions of Land, requires subdivisions to provide for control of drainage, stormwater runoff, and prevention of erosion and sedimentation.

3.8.3. ENVIRONMENTAL IMPACT ANALYSIS

SIGNIFICANCE CRITERIA

Based on the State CEQA Guidelines, Appendix G, a project would be considered to result in a significant hydrological or water quality impact if it would:

a. Violate any water quality standards or waste discharge requirements. (Impact HYD-1.)

b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted). (Impact HYD-2.)

c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site. (Impact HYD-3.)

d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site. (Impact HYD-4.)

e. Create or contribute runoff water which would exceed the capacity of the existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff. (Impact HYD-5.)

f. Otherwise substantially degrade water quality. (Impact HYD-6.)

g. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map. (Impact HYD-7.)

h. Place within a 100-year flood hazard area structures which would impede or redirect flood flows. (Impact HYD-8.)

i. Expose people or structures to a significant risk or loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam. (Impact HYD-9.)

j. Inundation by seiche, tsunami, or mudflow. (Impact HYD-10.)

IMPACTS AND MITIGATION MEASURES

Impact HYD-1. Violate Water Quality Standards or Waste Discharge Permits

***Westlands Solar Park*. The development of solar generating facilities within WSP would not violate any water quality standards or waste discharge requirements. (*No Impact*)**

***WSP Gen-Tie Corridors*. Construction of the WSP gen-tie projects would not violate any water quality standards or waste discharge requirements. (*No Impact*)**

This impact analysis addresses significance criterion 'a' above.

Water quality standards can refer to drinking water standards or surface water standards. Further, there are separate surface water standards for discharges from wastewater treatment plants and for discharges of stormwater. These are discussed in turn below for Westlands Solar Park and Westlands Transmission Corridors.

Westlands Solar Park

Drinking Water Standards. Drinking water standards are implemented by the state Department of Public Health, and apply to local water distribution systems for domestic water supply. No domestic water distribution systems are anticipated to be installed for any WSP solar development. Since drinking water for solar facility employees would be provided by bottled water delivered by truck, the drinking water standards would be applicable at the water bottling plant. (See section *3.17. Utilities and Services* for a detailed discussion of water supply.)

Surface Water Quality Standards. As discussed in Section *3.8.2 Regulatory Context*, the Regional Board identifies water bodies where water quality is impaired or limited by the presence of pollutants. Within the WSP plan area, the Lower Kings River is listed as a water quality limited river segment that is impaired by electrical conductivity (salinity), molybdenum, and Toxaphene, all of which originate from agricultural activity. Since the WSP plan area is not hydrologically connected to the Kings River, there is no potential for WSP solar development to exacerbate or be adversely affected by the pollutant loads in the lower Kings River.

Stormwater Standards. The Central Valley Regional Water Quality Control Board has not established numeric standards for surface water runoff quality; therefore, no surface water quality standards apply to the WSP solar development. (See Impacts HYD-3, HYD-5 and HYD-6 for discussions of water quality impacts and mitigations during project construction, operation, and decommissioning.)

Wastewater Treatment Standards. Waste Discharge Requirements refers to standards applied to local wastewater treatment facilities by the Regional Water Quality Control Board for quantities and quality of wastewater discharge. No wastewater treatment facilities would be constructed in conjunction with WSP solar development, so no discharge requirements would apply. Individual septic systems are regulated under the Kings County Plumbing Code, which sets forth design criteria and standards for their installation. It is not anticipated that septic systems will be installed at any WSP solar facilities. For larger SGFs, wastewater disposal may be provided by septic tanks which would be pumped periodically and disposed of at an approved wastewater treatment facility in the region. For smaller project, sanitary needs would be provided by portable chemical toilets that would be serviced by an outside contractor as needed.

In summary, the development of solar generating facilities within WSP would not violate any water quality standards or waste discharge requirements. Therefore, WSP solar development would result in *no impact* in terms of water quality standards and requirements.

WSP Gen-Tie Corridors

Drinking Water Standards. No domestic water distribution systems are anticipated to be installed in conjunction with the gen-tie projects. Since drinking water for construction workers and maintenance staff would be provided by bottled water the drinking water standards would be applicable at the water bottling plant.

Surface Water Quality Standards. There are no impaired water bodies identified by the Regional Board in the vicinity of the gen-tie corridors. Nearest impaired water bodies are the Kings River, located at least 4 miles east, and Panoche Creek, located at least 46 miles northwest of the gen-tie corridors. The lands in the vicinity of the gen-tie corridors are not hydrologically connected to either of these impaired water bodies, so there is no potential for the gen-tie projects to exacerbate or be adversely affected by the pollutant loads in either water body.

Stormwater Standards. The Central Valley Regional Water Quality Control Board has not established numeric standards for surface water runoff quality; therefore, no surface water quality standards apply to the WSP gen-tie projects. (See Impacts HYD-3, HYD-5 and HYD-6 for discussions of water quality impacts and mitigations during construction and project operation.)

Wastewater Treatment Standards. No wastewater treatment facilities would be constructed in conjunction with the WSP gen-tie projects, so no discharge requirements would apply. When workers are scheduled at a particular construction site for extended periods, sanitary needs would be provided by portable chemical toilets.

In summary, the construction of the WSP gen-tie projects would not violate any water quality standards or waste discharge requirements. Therefore, the transmission projects would result in *no impact* in terms of water quality standards and requirements.

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

Impact HYD-2. Effects on Groundwater Use and Recharge

***Westlands Solar Park*. WSP solar development would result in a substantial reduction in net groundwater use compared to the existing agricultural uses, and would not interfere with groundwater recharge. WSP solar development would reduce the overall volume of groundwater pumped in the plan area which would help offset the decline of groundwater levels in the basin. (*Less-than-Significant Impact*)**

***WSP Gen-Tie Corridors*. Construction and operation of the WSP gen-tie projects would require the use of small volumes of water, which would have little or no effect on groundwater supplies. The very small amount of impervious surfaces resulting from the gen-tie projects would not interfere with groundwater recharge. (*Less-than-Significant Impact*)**

This impact analysis addresses significance criterion 'b' above.

Westlands Solar Park

WSP solar development would involve the use of groundwater during the construction, operation, and decommissioning phases of each solar project, as discussed below. [It is noted that this discussion is focused only on impacts to groundwater resources; the broader analysis of overall water supply impacts is addressed in Section *3.17. Utilities and Service Systems*.]

SGF Construction

During the grading and construction for solar development, water would be regularly applied to exposed soils and internal access driveways for dust suppression. During earthwork, water would also be required in soil conditioning for optimum moisture content. As discussed in the Chapter *2. Project Description*, it is estimated that each MW of solar generation capacity would involve the use of 2.0 acre-feet of water during the grading and construction phases. It is anticipated that all construction water would be obtained from the existing agricultural wells that are located throughout the WSP plan area. For a typical 250 WM solar project, the total groundwater pumped during project construction would be approximately 500 acre-feet, or about 0.20 acre-feet per acre for a 2,500-acre site.

As discussed in Section *3.8.1. Environmental Setting*, current groundwater pumping in the area varies substantially from year to year depending on availability of surface water deliveries of CVP water delivered through the WWD. During years when WWD receives most of its CVP water allocation, groundwater pumping provides a relatively minor portion of irrigation requirements. During years of severe drought, like the recent drought of 2012 through 2015, groundwater pumping increases to make up for shortfalls of surface water deliveries. In the 30-year period from 1988 to 2017, groundwater withdrawals within WWD averaged 273,000 AF per year, or the equivalent of approximately 0.48 acre-feet per irrigable acre within WWD. Westlands Water District is in the process of developing the sustainable yield of the subbasin through its compliance efforts under the Sustainable Groundwater Management Act (SGMA)(see Section *3.8. Hydrology and Water Quality* for a description of SGMA). Once the sustainable yield number is determined, the yield per acre will vary somewhat throughout WWD depending on localized hydrogeology. However, sustainable yield of the Westside Subbasin will likely be a lower extraction rate than the historical average.

The 2,000 MW Westlands Solar Park would be built-out over a period of about 12 years, reflecting an installation rate 167 MW per year on average. For purposes of analysis, it is assumed that the maximum pace of development would be equivalent to about 250 MW in any given year. This represents an annual groundwater demand of 500 acre-feet, or 0.20 acre-feet per acre per year. This volume of groundwater pumping is less than half the 0.48 acre-feet "historical average annual pumping volume throughout WWD since 1988, and is substantially less than the average groundwater pumping volumes of about 1.0 acre-foot per acre during the recent drought years of 2012-2016. Therefore, while groundwater pumping for SGF construction would continue for 12 years, the groundwater pumped during construction would be substantially less than historical pumping volumes, and thus would very likely be within sustainable yield (currently in the process of being determined by WWD) for the groundwater basin on a per acre basis. Therefore, construction of the WSP solar facilities would not contribute to the depletion of groundwater or contribute to the lowering of local groundwater levels. As such, the impact of WSP solar project construction upon groundwater resources would be *less than significant*.

SGF Operation

During SGF operation, non-potable water will be required for activities such as panel cleaning, watering sheep, washing or rinsing equipment, and other operational uses. As described in Chapter *2. Project Description*, the combined water usage from all operational activities is estimated to be 0.0135 acre-feet per acre annually, or approximately 33.8 acre feet per year for a 250 MW solar facility on 2,500 acres.

Operational supplies will be provided by Westlands Water District (WWD) through its existing system of lateral pipelines for conveyance of imported surface water. Under the WWD's Municipal and Industrial (M&I) Regulations, an applicant may apply for and receive up to 5 acre-feet annually for water for M&I use. The District has estimated that solar development requires 3-5 acre-feet per year per 160 acres. In order to provide for solar projects greater than 160-acres in size, the WWD has established an exception to the M&I limit whereby solar development would be eligible to receive up to 5 acre-feet per year for each 160 acres developed (WWD 2013b). The estimated 0.0135 acre-feet per acre for annual operational water consumption for a typical WSP solar project is equivalent to 2.16 acre-feet per quarter section (160 acres). Since this is well within the 5.0 acre-feet per year of imported surface water

per quarter section that a solar project would be eligible to receive under WWD's M&I rules, there would be no need to augment surface water supplies with groundwater for SGF operations.

Temporary periodic curtailment of surface water supplies to meet the operational demands of WSP solar development is not currently foreseen. However, in the unlikely event that such unforeseen curtailment may occur in the future, possibly in the event of a prolonged severe drought, the relatively small volumes of untreated water that would be required for SGF operations would likely be obtained from the existing groundwater wells within the WSP plan area. In the unlikely event that such backup groundwater supplies to the SGFs were also to be curtailed at the same time, the relatively small volumes of untreated water required for SGF operations would be purchased from alternative sources and trucked to the sites. (See Section *3.17. Utilities and Service Systems* for further discussion.)

With regard to groundwater recharge, approximately 90 percent of each WSP solar facility site would remain in pervious vegetative cover. This would allow for continuation of rainwater percolation through the soils and into the groundwater basin. Therefore, WSP solar development would result in little if any reduction in groundwater recharge, and the impact in terms of interference with groundwater recharge would *less than significant*.

SGF Decommissioning

At the end of the useful life of each WSP solar facility, untreated water would be required for decommissioning, although the volume of water needed is expected to be less than required during the construction phase. Since vegetative cover would be maintained during deconstruction, there would be relatively little exposed soil that would require watering for dust suppression. Similarly, water would not be required for soil conditioning, as it is during construction. The source of water during decommissioning is expected to be from existing wells within the WSP plan area. The total groundwater pumped during decommissioning is expected to be substantially less than the estimated 0.2 acre-feet per acre required during project construction. As discussed above under "SGF Construction," this rate of groundwater pumping is not expected to exceed the sustainable yield of the groundwater basin on a per acre basis. As such, the impact of decommissioning of WSP solar projects upon groundwater resources would be *less than significant*.

In summary, the estimated groundwater pumping during all phases of WSP solar development would not be expected to exceed the sustainable yield of the groundwater basin, and would also be substantially less than current groundwater used in agricultural production, on a per acre basis. Also, the substantial retention of pervious vegetated area within each solar facility site would ensure there is no interference with groundwater recharge. Therefore, WSP solar development would not contribute to the depletion of groundwater or contribute to the lowering of local groundwater levels. As such, the impact of WSP solar development upon groundwater resources would be *less than significant.*

WSP Gen-Tie Corridors

During construction of the WSP gen-tie projects, water would be needed for dust suppression, cleaning, and in mixing of concrete for tower foundations. Non-potable water would be purchased from local water purveyors and hauled to each tower site, temporary access driveway, or staging area. The overall acreage subject to disturbance would be relatively small (~149 acres) and would occur at isolated locations over

the 23 miles of gen-tie corridor, or equivalent to approximately 6.5 acres of disturbed area per mile. Assuming overall water use would be similar to that of WSP solar development, or 0.2 acre-feet per acre, the total water demand for gen-tie project construction would be approximately 30 acre-feet. This would be equivalent to the irrigation requirements of about 12 acres of agricultural land for one year (assuming the average WWD water application rate of 2.5 afy per acre). If all of the water requirements for gen-tie construction were obtained from groundwater, this very small amount of groundwater pumping over the substantial length of the corridors would have a negligible effect on groundwater levels.

During operation of the gen-tie lines, very little water would be used in maintenance and repair activities. While the gen-tie lines would be constructed over the groundwater basins of the San Joaquin Valley, the total area of impervious surfaces resulting from the gen-tie projects would be very small, consisting mainly of concrete tower footings, which would not interfere with groundwater recharge.

In summary, the construction and operation of the WSP gen-tie projects would require the use of small volumes of water. While some or all of the water demand may be provided by groundwater, the volumes involved would be very small and would have a negligible effect on groundwater supplies. The gen-tie projects would result in a very small increase in impervious coverage, and would not interfere with groundwater recharge. Therefore, the impact of the WSP gen-tie projects upon groundwater resources would be *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

Impact HYD-3. Alteration of Drainage Patterns, Erosion or Sedimentation

***Westlands Solar Park*. The WSP solar projects would result in potential water quality impacts from erosion and sedimentation during the construction and decommissioning phases. (*Less-than-Significant Impact with Mitigation*)**

***WSP Gen-Tie Corridors*. The construction of the gen-tie projects would result in potential water quality impacts from erosion and sedimentation during the construction. (*Less-than-Significant Impact with Mitigation*)**

This impact analysis addresses significance criterion 'c' above.

Westlands Solar Park

There are no natural drainage courses within the WSP plan area, and it is not part of a larger watershed. Under current conditions, rainfall percolates into the soil or evaporates, with little or no runoff. Therefore, the WSP plan area is essentially a hydrologically closed system with respect to stormwater.

The WSP solar projects would involve site clearing, minor grading, soil compaction, establishment of temporary construction staging areas, excavation of temporary water supply basins, and trenching for solar arrays, and construction of support facilities and internal access driveways. Since the existing ground is virtually level, solar development within the WSP plan area can be accommodated without mass grading. Ground preparation would include tilling and minor grading to smooth out existing agricultural furrows, followed by compaction with rollers. Finished grades would be designed to provide for positive site drainage. As discussed in the Chapter *2. Project Description*, site clearing and soil preparation would occur incrementally and would not take place until a given area is needed for the next construction phase within each solar development, which typically would comprise the next solar block or array in a predetermined sequence. Vegetative cover would be retained as long as possible to minimize exposed soils and reduce potential for erosion and wind-blown dust.

Once vegetation is removed, the exposed and disturbed soil would be susceptible to erosion from wind and rain, although the potential for sediment transport would be reduced by the flat terrain. This represents a *potentially significant impact*. With implementation of Mitigation Measure HYD-1 below, the impact would be reduced to *less than significant*.

WSP Gen-Tie Corridors

Construction of the gen-tie projects would involve soil-disturbing activities such as leveling and excavation for tower foundations and grading for temporary access roads. Although the potential for erosion and sedimentation is reduced in the gen-tie corridors due to the flat terrain, the impact would be *potentially significant*. With implementation of Mitigation Measure HYD-1 below, the impact would be reduced to *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. Implement MM HYD-1.**

***WSP Gen-Tie Corridors*. Implement MM HYD-1.**

MM HYD-1. Stormwater Quality Protection. Prior to construction grading and prior to the decommissioning, the applicant shall be required to file a "Notice of Intent" (NOI) with the SWRCB to comply with the General Permit and prepare a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP for each project phase shall be prepared by a licensed engineer and shall detail the treatment measures and best management practices (BMPs) to control pollutants that shall be implemented and complied with during the construction and post-construction phases of solar development. The

SWPPP(s) required for decommissioning shall specify BMPs to be implemented during that final project phase. The construction contracts for each project phase, and for the decommissioning phase, shall include the requirement to implement the BMPs in accordance with the SWPPPs.

As discussed in Section *3.8.2. Regulatory Setting*, the solar projects developed within the WSP will be subject to the U.S. EPA's National Pollutant Discharge Elimination System (NPDES) permit requirements for construction activities. These are implemented at the state level through the General Permit for Discharges of Storm Water Associated with Construction Activity, as administered by the State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Board (RWQCB). All project SWPPPs would be subject to approval by the Central Valley Regional Water Quality Control Board (CVRWQCB), which would make the final determinations on which BMPs are required for each project. The construction contracts for each construction phase, and for the decommissioning phase, would include the requirement to implement the BMPs in accordance with the SWPPPs. The SWPPPs would identify the responsible entities for both the construction and post-construction periods. The SWPPPs are to be kept on-site during construction, where they would be subject to inspection by Kings County and CVRWQCB staff. The SWPPPs are to be updated each year for each solar project while construction is ongoing.

The SWPPPs will specify such practices as: scheduling construction activities around forecasted rain events, designation of restricted-entry zones, sediment tracking control measures (e.g., crushed stone or riffle metal plate at construction entrances), truck washdown areas, diversion of runoff away from disturbed areas, protective measures for sensitive areas, outlet protection, provision mulching for soil stabilization during construction, and provision for revegetation upon completion of construction within a given area. The SWPPPs will also prescribe treatment measures to trap sediment once it has been mobilized, at a scale and density appropriate to the size and slope of the catchment area. For solar development, these measures would typically include: straw bale barriers, straw mulching, fiber rolls and wattles, silt fencing, and/or siltation or sediment ponds. Upon completion of each solar block, the finished grades beneath and around the finished solar arrays would be vegetated with a native seed mix. The reestablished vegetated cover would stabilize the soils and minimize the potential for post-construction erosion.

The gen-tie projects would be subject to the same NPDES requirements for preparation and implementation of SWPPPs, as discussed above for the WSP plan area. Typical BMPs would be the same or similar to those described above for the Westlands Solar Park.

Impact HYD-4. Drainage and Flooding

***Westlands Solar Park*. The WSP solar projects would result in a slight increase stormwater runoff compared to existing conditions; however, stormwater runoff would be controlled and retained within each solar project site, and flooding would be avoided. (*Less-than-Significant Impact*)**

***WSP Gen-Tie Corridors*. The gen-tie projects would result in a slight increase stormwater runoff compared to existing conditions; however, stormwater runoff would be controlled within each disturbance area, and flooding would be avoided. (*Less-than-Significant Impact*)**

This impact analysis addresses significance criterion 'd' above.

Westlands Solar Park

The WSP solar projects would result in minimal impervious surface coverage of their sites. The solar arrays would occupy approximately 90 percent of each site and would be mounted on steel posts, with the ground beneath retained in vegetated cover. Impervious surfaces would consist of transformer and inverter pads, small operations buildings, footings and pads for on-site substations and switching stations, and small asphalt areas for accessible parking. These structures would occupy less than one percent of each solar project site. Internal gravel driveways would take up the remaining 9 percent of each project site, and would be composed of permeable gravel to allow for percolation of rainfall into the underlying soil. With 99 percent of each solar project site retained in permeable surfaces, the resulting increase in stormwater runoff would be negligible. The very small amount of runoff from the impervious surfaces would be displaced to immediately adjacent vegetated areas and readily absorbed into the ground. The solar arrays would not displace runoff, and rainwater falling from edges of the panels would spread to vegetated areas beneath the arrays and percolate into the ground.

The terrain of the WSP plan area is virtually flat, with a maximum gradient of 0.3 percent. Under current conditions, rainfall percolates into the soil with little or no runoff. The WSP solar projects would result in no substantial modification of existing site grades. During normal rain events, runoff from impervious surfaces would be absorbed by the adjacent vegetated ground and percolate into the soil. During more intense or prolonged storm events, the ground could become saturated and relatively minor volumes of stormwater may temporarily pond on the surface and gradually evaporate or percolate into the ground, as occurs under existing conditions. Given the virtually level ground and almost complete coverage of each solar project site with permeable soils to absorb rainwater, the conditions that would allow for stormwater to be mobilized and concentrated in sustained runoff flows would not exist. The introduction of very small areas of impervious surfaces distributed throughout each solar project would not have a discernable effect on drainage runoff patterns within the WSP solar project sites, and would not result in flooding within or beyond each SGF site.

In summary, given the minimal terrain alteration and the very small amount of impervious surface coverage resulting from the WSP solar projects, there would be no discernable effect on runoff patterns within the WSP plan area. Therefore, drainage and flooding impacts associated with the WSP solar development would be *less than significant*.

WSP Gen-Tie Corridors

The gen-tie projects would result in placement of very few permanent features on the ground surface. These features would consist primarily of concrete footings for tower structures, which would add a negligible amount of impervious surface area. The very small volume of additional runoff from these impervious surfaces would be readily absorbed into the ground adjacent to these features. There is no potential for gen-tie projects to result in increased flood hazard. Therefore, the drainage and flooding impacts associated with the gen-tie projects would be *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

Impact HYD-5. Operations-Related Impacts to Water Quality

***Westlands Solar Park*. The WSP solar facilities would generate minimal stormwater pollutants, and would result in little or no stormwater runoff; therefore, the operation of WSP solar facilities would not adversely affect water quality. (*Less-than-Significant Impact*)**

***WSP Gen-Tie Corridors*. The gen-tie projects would generate minimal stormwater pollutants, and would result in little or no stormwater runoff; therefore, the operation of gen-tie lines would not adversely affect water quality. (*Less-than-Significant Impact*)**

This impact analysis addresses significance criterion 'e' above.

Westlands Solar Park

The operation of the WSP solar facilities would not introduce substantial sources of stormwater pollutants, such as oil, grease, metals, and debris typically associated with stormwater pollution generated on urban streets and parking lots. The very minor leaks of oil or lubricants that may occur from maintenance vehicles and equipment used at the solar facilities would not be substantially different in nature or quantity from those expected from farm machinery used within the WSP plan area under pre-project conditions. As discussed under Impact HYD-4, above, the stormwater generated at the solar facility sites would tend to percolate into the soil, as under current conditions, due to the very small amount impervious surfaces that would be created by the solar projects (i.e., less than 1 percent of total SGF site area). Given also the flatness of the terrain, there would be little or no off-site runoff generated by the solar facilities. Considering also the absence of natural drainage features in or near the WSP plan area, there is virtually no potential for the small amount of stormwater pollutants

generated at the solar facilities to reach downstream water bodies and adversely affect water quality. Therefore, the potential water quality impacts resulting from the operation of WSP solar facilities would be *less than significant*.

WSP Gen-Tie Corridors

After completion of the gen-tie projects, the ongoing inspection, maintenance, and repair activities would involve travel to the tower sites by maintenance vehicles which could leak minor amounts of oil or lubricants. Since almost all of surrounding areas would consist of natural or cultivated pervious soil cover, the potential for the very small amounts of these pollutants to become entrained in stormwater runoff and be conveyed to downstream water bodies is virtually nil. Therefore, the potential water quality impacts resulting from the operation of the gen-tie lines would be *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

Impact HYD-6. Other Impacts to Water Quality

***Westlands Solar Park*. The WSP solar projects would result in potential water quality impacts related to discharges of hazardous materials during construction and decommissioning. (*Less-than-Significant Impact with Mitigation*)**

***WSP Gen-Tie Corridors*. The gen-tie projects would result in potential water quality impacts related to discharges of hazardous materials during construction. (*Less-than-Significant Impact with Mitigation*)**

This impact analysis addresses significance criterion 'f' above.

Westlands Solar Park

During the construction and decommissioning phases for each WSP solar project, there is a potential for discharges of hazardous materials that could adversely affect the quality of surface water or groundwater. Spills or leaks from heavy equipment and machinery can result in oil and grease contamination of stormwater. Staging areas and building sites can be the source of pollution due to paints, solvents, cleaning agents, and metals contained in the surface of equipment and materials. Gross pollutants such as trash, debris, and organic matter are additional potential pollutants associated with the construction and decommissioning phases of the project. The potential discharges of hazardous materials during construction and decommissioning of WSP solar projects could result in a

potentially significant impact to water quality. With implementation of Mitigation Measure HYD-1 above, the impact would be reduced to *less than significant*.

WSP Gen-Tie Corridors

During construction of the gen-tie projects, there is a potential for discharges of hazardous materials, as discussed above for Westlands Solar Park, which could adversely affect the quality of surface water or groundwater. The potential discharges of hazardous materials during construction of the gen-tie projects could result in a *potentially significant impact* to water quality. With implementation of Mitigation Measure HYD-1 above, the impact would be reduced to *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. Implement MM HYD-1. No additional mitigation is required.**

***WSP Gen-Tie Corridors*. Implement MM HYD-1. No additional mitigation is required.**
The measures required under MM HAZ-1 to prevent hazardous contamination during the construction and decommissioning phases would be specified in the Storm Water Pollution Prevention Plans (SWPPPs) required to be implemented for each project. The project SWPPPs will include construction and decommissioning phase housekeeping measures for control of contaminants such as petroleum products, paints and solvents, detergents, fertilizers, and pesticides, as well as vehicle and equipment fueling and maintenance practices, and waste management and disposal control practices, among other things.

Impact HYD-7. Impacts to Development within 100-year Floodplain

***Westlands Solar Park*. During the 100-year storm event, small portions of the WSP plan area may be subject to minor flooding; however, any building and equipment pads in these areas would be raised above surrounding ground elevations to prevent flooding damage to such structures. (*Less-than-Significant Impact*)**

***WSP Gen-Tie Corridors*. In areas where the gen-tie corridors cross mapped flood zones, transmission towers would be placed to avoid flood zones, or where avoidance is not possible, tower structures would be designed to withstand flood flows. (*Less-than-Significant Impact*)**

This impact analysis addresses significance criterion 'g' above.

Westlands Solar Park

As discussed in *Section 3.8.1. Environmental Setting*, FEMA's flood zone mapping for Kings County indicates that the WSP plan area is not located within the flood zones for the 100-year or 500-year events as

mapped on the Flood Insurance Rate Maps (FIRM)(see Figure HYD-1). However, mapping conducted by the California Department of Water Resources as part of the Awareness Floodplain Mapping project indicates that relatively small areas of flood-prone lands, not mapped by FEMA, are located near the southern tip of the WSP plan area and along the northeastern boundary. (The DWR-mapped flood zones are shown on Figure HS-6 in the Health and Safety Element of the 2035 Kings County General Plan.) DWR's awareness maps identify flood-prone areas using approximate assessment procedures and are not mapped as regulated floodplains by FEMA.

The Kings County General Plan requires consideration of the DWR-mapped flood zones in reviewing development proposals, including solar projects. The Kings County Flood Damage Prevention Ordinance requires new development to be designed and constructed to prevent flood damage. Within the DWR-mapped flood-prone areas of the WSP plan area, any planned structures, such as possible O&M facilities, and transformer and inverter pads, would be raised above flood elevations in order avoid potential flooding damage to these facilities. Buried electrical conduit planned for flood-prone areas would be enclosed in waterproof pipes**.**

In summary, the no portion of the WSP plan area is mapped as regulated floodplain by FEMA flood zone mapping, but relatively small flood-prone areas occur near the southern and eastern boundaries of the WSP plan area, as mapped by DWR. Within these minor flood-prone areas, any buildings and equipment pads would be raised above flood elevations to avoid flooding impacts. Therefore, potential flooding impacts within the WSP plan area would be *less than significant*.

WSP Gen-Tie Corridors

As shown in Figure HYD-1, the gen-tie corridors pass through 100-year flood zones in southwest Fresno County. The largest flood-prone area is located between the WSP plan area and the California Aqueduct to the west. This area would be traversed by the WSP North to Gates Gen-Tie, which crosses 6 miles of flood zone, and the WSP South to Gates Gen-Tie, which crosses 2.5 miles of flood zone.

The transmission towers would be placed outside of the flood zones wherever possible. In areas where spanning the flood zone is not possible, the tower structures would be designed to withstand flood flows. As such, potential flooding impacts to the gen-tie facilities would be *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

Impact HYD-8. Impede or Redirect Flood Flows

***Westlands Solar Park*. No lands within the WSP plan area are mapped within the 100-year flood zone or the 500-year flood zone, per FEMA's regulatory flood zone mapping. In the small areas of the WSP plan area that are mapped as flood-prone by DWR, the solar facilities would be raised above flood elevations and thus would not impede or redirect flood flows. (*Less-than-Significant Impact*)**

***WSP Gen-Tie Corridors*. The placement of some transmission towers within 100-year flood zones is unavoidable; however, the relatively small concrete footings of the intermittently spaced tower structures would not impede or redirect flood flows. (*Less-than-Significant Impact*)**

This impact analysis addresses significance criterion 'h' above.

Westlands Solar Park

There are no FEMA-designated floodways in the vicinity of the WSP plan area. The nearest floodway mapped by FEMA is the reach of Cross Creek between SR-198 and the Tulare Lakebed which is at least 15 miles east of the WSP boundary. The Kings River, located 2 miles east of the WSP plan area, is designated as a floodway by the Central Valley Flood Protection Board. As shown in Figure HYD-1, there are no FEMA-designated 100-year flood zones or 500-year flood zones within the WSP plan area; however, there are two small areas at the eastern and southern peripheries of the plan area that are mapped by DWR's Awareness Floodplain Mapping project as being subject to potential flooding during the 100-year event. . The awareness maps identify the 100-year flood hazard areas using approximate assessment procedures. These floodplains are shown simply as flood prone areas without specific depths and other flood hazard data. These maps are not FEMA regulatory floodplain maps.

The WSP solar projects would consist mainly of solar arrays which would be mounted several feet above ground level on metal posts. Within any flood-prone areas, buildings and equipment pads within solar projects would be raised above flood elevations on short concrete piers to minimize displacement of flood waters. As such, the potential for the affected WSP solar projects to redirect or block of flood flows would be negligible, and the potential impact would be *less than significant*.

WSP Gen-Tie Corridors

The gen-tie corridors pass through a broad area of mapped 100-year flood zone located between the San Luis Canal/California Aqueduct and the Fresno/Kings County line. Spanning the flood zones would not be possible within this broad area of flooding. However, the only permanent structures that would be placed in the flood zone would be the concrete footings supporting each of the tower structures. The volume of displaced flood flows at each tower site would be very small. Given that the towers would be spaced 1,000 feet apart, on average, the overall displacement of flood flows resulting from the tower footings would be negligible. Therefore, the potential impacts of the transmission corridors in terms of redirecting or blocking flood flows, would *be less than significant*.

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

Impact HYD-9. Inundation Potential Due to Dam Failure

***Westlands Solar Park*. In the event of failure of large dams in the Sierra Nevada, the potential inundation areas would extend into the eastern areas of Kings County, but would not extend to the WSP plan area. (*Less-than-Significant Impact*)**

***WSP Gen-Tie Corridors*. In the Diablo Range, the nearest potential inundation areas are located substantial distances from the gen-tie corridors, and have no potential to affect the gen-tie projects. (*Less-than-Significant Impact*)**

This impact analysis addresses significance criterion 'i' above.

Westlands Solar Park

Some portions of Kings County located to the east and northeast of the WSP plan area are subject to potential inundation in the event of the failure of dams located in the Sierra Nevada. The failure of the Pine Flat Dam, located upstream on the Kings River, would result in potential inundation of an area that could extend as far west as Stratford and the City of Lemoore, but would stop short of the eastern WSP boundary. Failure of the Terminus Dam on the Kaweah River would include an inundation area that would extend to a point just east of the City of Hanford, or more than 10 miles east of the WSP plan area. If Pine Flat Dam failed while at full capacity, its floodwaters would arrive in Kings County within approximately five hours. If Terminus Dam failed while at full capacity, its floodwaters would arrive in Kings County within approximately 12 hours. The chances of either of these dams failing while at full capacity are considered remote. (The mapped inundation areas are shown on Figure HS-7 in the Health and Safety Element of the 2035 Kings County General Plan.) The failure of Success Dam on the Tule River would not affect Kings County. In summary, the WSP plan area is not located within the mapped inundation areas for any of the reservoirs in the region, and therefore risk to WSP solar facilities due to flooding from dam failure would be *less than significant*.

WSP Gen-Tie Corridors

The nearest inundation zones to the gen-tie corridors are the mapped inundation zones for failure of the detention dams on Los Banos Creek and Little Panoche Creek in the Diablo Range. These inundation zones are located approximately 75 miles and 60 miles from the gen-tie corridors, respectively.

Therefore, the potential failure of these dams and resulting inundation of downstream areas would have *no impact* on the WSP gen-tie facilities.

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

Impact HYD-10. Inundation by Seiche, Tsunami, or Mudflow

***Westlands Solar Park*. The WSP plan area is located substantial distances from areas subject to potential flood hazards from catastrophic events such as seiches, tsunamis, or mudflows; therefore, WSP solar development would not be subject to flooding risks from these sources. (*Less-than-Significant Impact*)**

***WSP Gen-Tie Corridors*. The gen-tie corridors are located substantial distances from areas subject to potential flood hazards from catastrophic events such as seiches, tsunamis, or mudflows; therefore, the WSP gen-tie facilities would not be subject to flooding risks from these sources. (*Less-than-Significant Impact*)**

This impact analysis addresses significance criterion 'j' above.

Westlands Solar Park

Seiches are seismically-induced waves in an enclosed body of water such as a lake or reservoir. Severe seismic shaking can cause impounded water to spill beyond the banks and inundate surrounding lands. There are no water bodies in the WSP vicinity, so there is no potential for seiches to affect the WSP plan area.

Tsunamis are large and rapidly moving ocean waves that result from sudden and large scale fault movement on the ocean floor. Due to WSP's inland location more than 70 miles from the Pacific Ocean, and given its elevation at over 200 feet above mean sea level, the WSP plan area is not subject to inundation from tsunamis.

Mudflows occur when unstable hillsides or mountain slopes fail as a result of a seismic event and/or oversaturated conditions. Also called "debris flows," these flows move quickly with large amounts of debris (soil, boulders, trees, etc.). There are no hillsides within or near the WSP plan area which would be a source of mudflows or debris flows which could affect the WSP solar facilities.

In summary, there is no potential for the WSP plan area to be affected by seiches, tsunamis, or mudflows; therefore, the potential impact to WSP solar development due to these hazards is *less than significant*.

WSP Gen-Tie Corridors

With respect to seiches, there are no large bodies of water in the vicinity of gen-tie corridors that would seiches that could affect the gen-tie facilities.

With regard to tsunamis, the gen-tie corridors would not be affected by this potential hazard, given their location at least 65 miles from the ocean and their lowest elevation at over 200 feet above mean sea level.

Regarding mudflows, or debris flows, the conditions necessary to generate these rapidly moving flows are not present on the valley floor due to the absence of hillsides.

In summary, there is no potential for the gen-tie corridors to be affected by seiches, tsunamis, or mudflows; therefore, the potential impact to the transmission projects due to these hazards is *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

Cumulative Impacts

Impact HYD-11. Cumulative Hydrology and Water Quality Impacts

***Westlands Solar Park*. The potential cumulative drainage, flooding, water quality, and groundwater impacts resulting from WSP solar development, combined with impacts from related cumulative projects, would be less than cumulatively significant under near-term and far-term conditions, with mitigation. (*Less-than-Significant Cumulative Impact with Mitigation*)**

***WSP Gen-Tie Corridors*. The potential cumulative drainage, flooding, water quality, and groundwater impacts resulting from the WSP gen-tie projects, combined with impacts from related cumulative projects, would be less than cumulatively significant under near-term and far-term conditions. (*Less-than-Significant Cumulative Impact with Mitigation*)**

Geographic Scope of Cumulative Impact Analysis

The study area for cumulative hydrology and water quality impacts is typically defined by the drainage area where a project is located and to which it contributes runoff. As discussed under Impact HYD-3 above, the WSP plan area is not physically part of a larger drainage area or watershed, so it is essentially a hydrologically closed system with respect to surface drainage. As such, it is highly unlikely that hydrology and water quality impacts would extend beyond the WSP plan area. Therefore, the geographic scope for the cumulative analysis of hydrology and water quality impacts associated with Westlands Solar Park is conservatively defined to extend no more than ¼ mile beyond the boundaries of the WSP plan area. Lands located at greater distances have no potential to contribute to cumulatively significant hydrology and water quality impacts in combination with the less-than-significant hydrology and water quality impacts associated with the WSP solar developments.

Regarding the WSP gen-tie corridors, the physical footprint of the gen-tie projects would be very small, during both construction and operation, so the area subject to potential hydrology and water quality impacts from the gen-tie projects is limited. Therefore, the geographic scope of the cumulative analysis for the gen-tie projects extends to lands adjacent to the gen-tie corridors, and includes the cumulative projects on those adjacent lands.

Westlands Solar Park

Near-Term

Under near-term conditions, there are 4 pending, approved, and completed projects (or groups of projects) within a ¼ mile radius of the WSP's outside boundaries. (Note: The Westside Solar project and Westlands Aquamarine solar project, shown in Figure PD-9, are located within the WSP plan area. Since the impacts associated with these projects are addressed in the WSP impact analysis, they are not included again in the list of cumulative projects below.) All four of these projects comprise solar PV developments. These solar projects are listed below and described in Section *2.5. Completed, Approved and Pending Projects/ Introduction to Cumulative Impact Analysis*. Their locations are shown in Figure PD-9a.

- Mustang/Orion/Kent South
- American Kings
- Mustang 2
- Kettleman

With respect to stormwater runoff, the WSP plan area and the other cumulative project sites have similar natural conditions like flat topography, semi-arid climate, lack of natural drainage courses, and no surface runoff under existing conditions. Since all of the cumulative projects involve PV solar generating facilities, the increased coverage by impervious surfaces would be 10 percent or less in all cases, resulting in very minor increases in stormwater runoff which would be readily absorbed by adjacent vegetated areas within each of those cumulative project sites. Since no stormwater would be discharged off-site from any of the cumulative projects, including solar development within the WSP plan area, there is little or no potential that runoff from the cumulative project would combine to result in cumulative drainage impacts or increased flooding risk. Even under major storm conditions, any offsite runoff would likely be captured by one of the many irrigation or agricultural drainage ditches in

the vicinity of each project site. Thus there is virtually no potential for runoff from several sites to combine to result in downstream drainage impacts. Therefore, the potential cumulative stormwater drainage impacts under near-term conditions would be *less than significant*.

With respect to flooding potential, FEMA's flood zone mapping for Kings County indicates that the WSP plan area is not located within the flood zones for the 100-year or 500-year events as mapped on the Flood Insurance Rate Maps (FIRM)(see Figure HYD-1). However, mapping conducted by the California Department of Water Resources as part of the Awareness Floodplain Mapping project indicates that relatively small areas of flood-prone lands, not mapped as regulated flood zones by FEMA, are located near the southern tip of the WSP plan area and along the northeastern boundary. . There are also 100-year flood zones adjacent to the west in Fresno County and to the southeast along SR-41, and one of the other cumulative projects (Kettleman Solar) is partially located in the FEMA-mapped 100-year flood zone along SR-41. Any cumulative projects located within mapped flood zones would be required to raise building and equipment pads above flood elevations on concrete piers or similar low profile structures to allow for passage of flows and minimize displacement of flood storage. The solar arrays themselves would be mounted on metal posts and raised above flood elevations. As such, any solar projects constructed in flood zones would not block or redirect flood flows, nor would they displace flood storage in the floodplain, and thus would not increase the depth or extent of flood-prone areas. As such, there is little or no potential that the development of the cumulative projects, including solar development of the WSP plan area, would result in new or increased flood hazard. Therefore, the cumulative flooding impact under near-term conditions would be *less than significant*.

Regarding potential inundation due to catastrophic failure of dams in the region, neither the WSP plan area nor any of the cumulative project sites are subject to inundation as a result of potential failure of Terminus Dam on the Kaweah River or Pine Flat Dam on the Kings River, or any other dam in the region. Therefore, the potential cumulative inundation impact under near-term conditions would be *less than significant*.

With respect to water quality, during the construction of each cumulative project, there is a potential for erosion of exposed soils and spills of hazardous materials that could have an adverse impact on surface water quality. This would represent a *potentially significant cumulative impact*. With implementation of Mitigation Measure HAZ-1 above, the impact would be reduced to *less than significant* for WSP solar development. It is expected that other cumulative development would also be required to implement similar water quality mitigation. Each cumulative project would be required to prepare and implement a SWPPP that would specify measures to prevent and control erosion and discharges of hazardous materials. These control measures would reduce the potential water quality impacts at each cumulative site to less-than-significant levels. Therefore, the cumulative impacts to water quality under near-term conditions would be *less than significant with mitigation*.

With respect to groundwater resources, each cumulative solar project would rely on well water during construction, and some cumulative solar projects would also rely on well water for operational use (e.g., Mustang/Orion/Kent South). The demand for water at each site would be highest during construction for purposes of dust control and soil conditioning. For most cumulative projects, construction water would be supplied by existing agricultural wells or new wells. It is estimated that construction water demand for each project would be about 0.2 acre-feet per acre (which would occur over less than one year for each acre of construction). This pumping rate is less than half the historical average

groundwater pumping rate throughout the District, and is not expected to exceed the sustainable yield for the groundwater basin on a per acre basis. Therefore, even if the other cumulative projects in the vicinity were constructed concurrently with the proposed project, the collective groundwater pumping rate is unlikely to exceed the sustainable yield of the aquifer.

The operational water supplies for each project would mainly be used for panel washing. As discussed under Impact HYD-2 above, operational water demand for the WSP solar projects is estimated to be approximately 0.0135 acre-feet per acre per year, or about 7 percent of the construction water demand rate. As noted, the project operational supply would be provided by M&I surface water deliveries from WWD, and not from groundwater pumping. Although it is likely that some of the other cumulative projects in area would rely solely on well water for operational needs, the volumes would be relatively low, and the collective water demands would not exceed the sustainable yield of the groundwater basin on a per acre basis. Therefore, the cumulative projects would not deplete groundwater supplies or resulting in lowering of the water table, either individually or collectively. In addition, since all of the cumulative projects would retain over 90 percent of their site areas in permeable vegetated cover, the projects would not interfere with groundwater recharge, individually or collectively. Therefore, the cumulative impact to groundwater supplies under near-term conditions would be *less than significant*.

In summary, the near-term cumulative drainage, flooding, and groundwater impacts resulting from the WSP solar development and related cumulative projects would be *less than cumulatively significant*. With respect to water quality, the near-term cumulative impact would be *less than significant with mitigation*.

Far Term

For far-term conditions, the cumulative analysis of hydrology and water quality impacts considers the full buildout of land uses adjacent to the WSP plan area as shown on the 2035 Kings County General Plan and the Fresno County General Plan (which covers lands immediately to the west of the plan area). The 'Kings County Land Use Map' of the Land Use Element shows that Kings County lands adjacent to the WSP boundaries are designated as either 'General Agriculture 20 ac.' or 'Exclusive Agriculture 40 ac.' Similarly, the Fresno County General Plan shows the lands adjacent to the WSP plan area are designated as 'Agriculture.' Thus it is reasonable to assume that agriculture production will remain the dominant land use in the adjacent and surrounding lands for the life of the General Plans.

It is important to consider that, as with the lands of the WSP plan area, the agricultural designations of the 2035 Kings County General Plan allow the installation of utility-scale PV solar generating facilities subject to the approval of a conditional use permit (KC 2010). Thus it is possible that additional solar development projects could be proposed in the WSP vicinity within the 25 year planning horizon of the General Plan. Since the adjacent lands to the west of the WSP plan area are located within Fresno County, the corresponding General Plan designations for Fresno County lands would guide permitted uses on adjacent lands to the west. Again, all Fresno County lands adjacent to the WSP plan area to the west are designated 'Agriculture' under the Fresno County General Plan (Fresno County 2010b). While the Fresno County General Plan does not specifically allow PV solar development on agriculturally-designated lands, the County has initiated a process for considering solar PV development on agriculturally-designated lands, and has approved a number of solar PV projects under this process (Fresno County 2013). Although no solar projects have been proposed or approved in the nearby areas of Fresno County to date (the nearest

is the Westlands Solar Farm located 7 miles west of WSP), it is reasonable to assume that Fresno County would consider proposals for PV solar development on agricultural lands near the WSP plan area.

With respect to stormwater, there are no defined drainage courses on adjacent agricultural lands which discharge or release stormwater beyond their boundaries under current conditions. It is expected that any future PV solar development of these adjacent lands would involve a very low percentage of coverage by impervious surfaces, resulting in little or no additional runoff. Therefore, the potential for cumulative increases in stormwater runoff and downstream flooding due to cumulative development in the far term would be *less than significant*.

Regarding flooding potential, the adjacent Fresno County lands to the west and lands on the eastern WSP boundary are mapped as 100-year flood zones. As is the case with near-term cumulative development, it is expected that any buildings and equipment pads in such flood-prone areas would be raised above flood elevations on concrete piers. The solar arrays themselves would be mounted on metal posts above flood elevations. Thus there is little or no potential for cumulative solar development to block or redirect flood flows, or to displace flood storage capacity resulting in increased depths or extent of potential flooding. Therefore, the cumulative flooding impacts under far-term conditions would be *less than significant*.

Regarding potential inundation due to catastrophic failure of dams in the region, neither the WSP plan area nor any adjacent lands are subject to inundation as a result of potential failure of dams in the region. Therefore, the potential cumulative inundation impact under far-term conditions would be *less than significant*.

With respect to water quality, during the construction of potential future solar projects adjacent to the WSP plan area, there is a potential for erosion of exposed soils and spills of hazardous materials that could have an adverse impact on surface water quality. This would represent a *potentially significant cumulative impact*. With implementation of Mitigation Measure HAZ-1 above, the impact would be reduced to *less than significant* for WSP solar development. It is expected that other cumulative development would also be required to implement similar water quality mitigation. Each cumulative project would be required to prepare and implement a SWPPP which would specify measures to prevent and control erosion and discharges of hazardous materials. These control measures would reduce the potential water quality impacts at each cumulative site to less-than-significant levels. Therefore, the cumulative impacts to water quality under far-term conditions would be *less than significant with mitigation*.

With respect to groundwater resources, any future solar projects in the adjacent areas would require water during construction and operation. It is expected that such projects would obtain needed water supplies for construction from wells within or near their sites. Water supplies for operational uses would be provided either from surface water deliveries from WWD (as is planned for WSP solar projects), or from well water from on-site wells or well water purchased from off-site sources. As discussed above for near-term conditions, the anticipated demand for groundwater supplies would be not be expected to exceed the sustainable yield of the groundwater basin on a per acre basis during both the construction and operational phases for any future solar projects (even assuming all construction and operational water is supplied by groundwater sources). In addition, the retention of over 90 percent of each solar project site in pervious vegetative cover would ensure that groundwater

recharge is not impeded. Therefore, the cumulative impact to groundwater supplies under far-term conditions would be *less than significant*.

In summary, the far-term cumulative drainage, flooding, and groundwater impacts resulting from the WSP solar development and related cumulative projects would be *less than cumulatively significant*. With respect to water quality, the far-term cumulative impact would be *less than significant with mitigation*.

WSP Gen-Tie Corridors

Near Term

Under near-term conditions, there are 3 approved and pending solar projects and two transmission projects on lands adjacent to the WSP gen-tie corridors. (Note: The Westside Solar project and Westlands Aquamarine solar project, shown in Figure PD-9, are located within the WSP plan area. Since the impacts associated with these projects are addressed in the WSP impact analysis, they are not included again in the list of cumulative projects below.) These projects are listed below and shown in Figure PD-10, and described in Section *2.5. Completed, Approved, and Pending Projects/Introduction to Cumulative Impact Analysis*.

- Mustang/Orion/Kent South solar projects
- Central Valley Power Connect transmission project (Gates to Gregg Substation)
- Westside Transmission Project (Gates to Dos Amigos/Los Banos Substation)

With respect to stormwater drainage, the cumulative solar and transmission projects would result in very minor increases in stormwater runoff which would be readily absorbed by adjacent vegetated areas within each of those cumulative project sites. Since no stormwater would be discharged off-site from any of the cumulative projects, there is little or no potential that runoff from the cumulative projects would combine to result in cumulative drainage impacts or increased downstream flooding. Therefore, the potential cumulative stormwater drainage impacts under near-term conditions would be *less than significant*.

With respect to flooding potential, portions of the WSP gen-tie corridors pass through areas mapped as 100-year flood zones. However, transmission towers would be designed and constructed to withstand flood flows. Of the other cumulative projects, portions of the Gates to Gregg Transmission Project and Westside Transmission Project would also pass through mapped flood zones, but those projects are also expected to be designed and constructed to avoid flooding impacts. None of the other cumulative projects are located in mapped flood zones. As such, there is little or no potential that the development of the cumulative projects, including Westlands transmission projects, would result in new or increased flood hazard. Therefore, the combined flooding impact under near-term conditions would *be less than significant*.

Regarding potential inundation due to catastrophic failure of dams in the region, the Valley Segment of the Westside Transmission Project lies partially within the inundation zone for failure of the Little Pinoche Reservoir Detention Dam. None of the other cumulative projects lies within this or any other mapped inundation zone. However, Little Panoche Reservoir Dam is regularly inspected and meets all

applicable dam safety standards, so the probability of catastrophic failure is very low. Therefore, the potential cumulative inundation impact under near-term conditions is *less than significant*.

With respect to water quality, during the construction of each cumulative project, there is a potential for erosion of exposed soils and spills of hazardous materials that could have an adverse impact on surface water quality. This would represent a *potentially significant cumulative impact*. With implementation of Mitigation Measure HYD-1 above, the impact would be reduced to *less than significant* for WSP gen-tie projects. It is expected that other cumulative development in the near term would also be required to implement similar water quality mitigation. Each cumulative project would be required to prepare and implement a SWPPP which would specify measures to prevent and control erosion and discharges of hazardous materials. These control measures would reduce the potential water quality impacts at each cumulative site to less-than-significant levels. Therefore, the cumulative impacts to water quality under near-term conditions would be *less than significant with mitigation*.

With respect to groundwater resources, the cumulative solar projects would have low water demands during construction and operation. The solar projects would be supplied by pumped groundwater, but water demands during both construction and operation would be far lower than agricultural demands for a comparable land area. The cumulative transmission projects would have very low water demands during construction and negligible water requirements for operation and maintenance. Therefore, the cumulative impact to groundwater resources under near-term conditions would be *less than significant*.

In summary, the near-term cumulative drainage, flooding, and groundwater impacts resulting from the WSP gen-tie projects and related cumulative projects would be *less than cumulatively significant*. With respect to water quality, the near-term cumulative impact would be *less than significant with mitigation*.

Far Term

Under far-term conditions, it is assumed that all the cumulative transmission and solar projects considered in the near-term analysis will be completed. The far-term cumulative analysis of hydrology and water quality impacts assumes the full buildout of land uses adjacent to the WSP gen-tie corridors as shown on the General Plans of Kings and Fresno Counties. All adjacent lands are designated for agricultural uses in the county general plans. While both counties allow solar PV projects on agriculturally-designated lands, it is not foreseeable which lands, if any, will be proposed for solar PV development adjacent to the WSP gen-tie corridors in the far term. Also, additional transmission facilities or other public utility uses could be planned for adjacent lands, but this eventuality is also unforeseeable at this time. However, this far-term analysis assumes that some solar PV development and additional transmission projects will be constructed in the project vicinity in the far term.

With respect to stormwater, it is expected that any future PV solar development or transmission project construction on adjacent lands would involve a very low percentage of coverage by impervious surfaces, resulting in little or no additional runoff. Therefore, the potential cumulative drainage impacts and increased flooding risk due to cumulative development in the far term would be *less than significant*.

Regarding flooding, it is possible that future solar or transmission project development would be constructed in 100-year flood zones. It is expected that any solar structures associated would be raised

above flood elevations, and that any transmission towers would be placed outside of flood zones or constructed to withstand flood flows where avoidance is not possible. There is little or no potential for such development to block or redirect flood flows, or to displace flood storage capacity resulting in increased depths or extent of potential flooding. Therefore, the cumulative flooding impacts under far-term conditions would be *less than significant*.

Regarding potential inundation due to catastrophic failure of dams in the region, there are no mapped inundations zones in the vicinity of the gen-tie corridors. Therefore, the potential cumulative inundation impact under far-term conditions is *less than significant*.

With respect to water quality, the potential for erosion of exposed soils and spills of hazardous materials in conjunction with any future solar or transmission projects is expected to be avoided or minimized through the implementation of measures like Mitigation Measure HYD-1, as specified above for the WSP gen-tie projects. Therefore, the cumulative impacts to water quality under far-term conditions would be *less than significant with mitigation*.

With respect to groundwater resources, any future solar and transmission projects in the adjacent areas would require water during construction and operation. However, the water requirements would be low for both types of projects during construction and operation. Therefore, the cumulative impact to groundwater supplies under far-term conditions would be *less than significant*.

In summary, the far-term cumulative drainage, flooding, and groundwater impacts resulting from the WSP gen-tie projects and related cumulative projects would be *less than cumulatively significant*. With respect to water quality, the far-term cumulative impact would be *less than significant with mitigation*.

Mitigation Measures:

***Westlands Solar Park*. Implement MM HYD-1. No additional mitigation is required.**

***WSP Gen-Tie Corridors*. Implement MM HYD-1. No additional mitigation is required.**

REFERENCES/BIBLIOGRAPHY – HYDROLOGY AND WATER QUALITY

Austin 2012 — Austin, John T. 2012. Floods and Droughts in the Tulare Lake Basin. Sequoia Natural History Association. http://tularebasinwatershed.org/sites/default/files/sites/all/default/files/pdf/Floods-Droughts-Tulare-Lake-Basin_JAustin_20130109.pdf

DWR 2003 — California Department of Water Resources. 2003. *California's Groundwater – Bulletin 118 – Update 2003 – Groundwater Basin Maps and Descriptions*.

October. http://www.water.ca.gov/groundwater/bulletin118/gwbasins.cfm

DWR 2016 — California Department of Water Resources. 2016. *Awareness Floodplain Maps*. http://www.water.ca.gov/floodmgmt/lrafmo/fmb/fes/awareness_floodplain_maps/

Fresno County 2000a — County of Fresno. 2000. Fresno County General Plan – Background Report, adopted October 2000. Available at http://www.co.fresno.ca.us/departmentpage.aspx?id=19705

Fresno County 2000b — County of Fresno. 2000. Fresno County 2000 General Plan –Policy Document. October. http://www2.co.fresno.ca.us/4510/4360/General_Plan/GP_Final_policy_doc/Table_of_Contents_rj_blue.pdf

Fresno County 2013 — County of Fresno. 2013. *Solar Facility Guidelines*. (Revised by BOS on 5/21/13.) http://www.co.fresno.ca.us/ViewDocument.aspx?id=53400

Fresno County 2016 — County of Fresno. 2013. Fresno County Code of Ordinances. As amended through April 26, 2016. https://www.municode.com/library/ca/fresno_county/codes/code_of_ordinances

FEMA 2009a — Federal Emergency Management Agency (FEMA). 2009. *Flood Insurance Rate Map (FIRM), Fresno County, California and Unincorporated Areas. Map Numbers 0619C-1375H, -1950H, -1975H, -2500H, -2800H, -3050H, -3075H, -3250H, -3275H*. Effective date February 18, 2009. http://msc.fema.gov/portal/search?AddressQuery=Fresno%20county%20california#searchresultsanchor

FEMA 2009b — Federal Emergency Management Agency (FEMA). 2009. *Flood Insurance Rate Map (FIRM), Kings County, California and Unincorporated Areas. Map Numbers 06031C-0300C, -0450C*. Effective date June 16, 2009. https://msc.fema.gov/portal/search?AddressQuery=Kings%20County%20California#searchresultsanchor

FEMA 2016 — Federal Emergency Management Agency (FEMA). 2016. *Flood Insurance Rate Map (FIRM), Merced County, California and Unincorporated Areas. Map Numbers 06047C-0800G, -1000G, - 10256G*. Panels not printed – all Zone D. Effective date April 16, 2009. http://msc.fema.gov/portal/search?AddressQuery=Merced%20county%20california

Kings County 2003 — Kings County. 2003. *County of Kings Improvement Standards*. May 6, 2003. http://www.countyofkings.com/home/showdocument?id=3098

Kings County 2010a — Kings County. 2010. *2035 Kings County General Plan*. Adopted January 26, 2010. http://www.countyofkings.com/home/showdocument?id=3106

Kings County 2015 — Kings County. 2015. *Kings County Code of Ordinances*. As amended through June 2, 2016. https://www2.municode.com/library/ca/kings_county/codes/code_of_ordinances

Kings County 2016 — Kings County. 2016. *Kings County Development Code. Kings County Code of Ordinances, Appendix A - Ordinance No. 668.12*. Dated January 26, 2016; Effective February 26, 2016. http://www.countyofkings.com/home/showdocument?id=12535

PG&E 2016 — Pacific Gas and Electric Company (PG&E). 2016. *Central Valley Power Connect – Overview*. April. http://cvpowerconnect.com/project-need-and-benefits

SWRCB 2006 — California State Water Resources Control Board. 2006. *2006 CWA Section 303(d) List of Water Quality Limited Segments Requiring TDMLs*. Approved by U.S. EPA June 28, 2007. http://www.swrcb.ca.gov/water_issues/programs/tmdl/docs/303dlists2006/epa/r5_06_303d_reqtmdls.pdf

SWRCB 2010 — California State Water Resources Control Board. 2010. *2010 Integrated Report – Clean Water Act Sections 303(d) and 305(b)*. April.

]

USBR 2016 — U.S. Bureau of Reclamation (USBR). 2016. *Central Valley Project – San Luis Unit – General Description*. http://www.usbr.gov/projects/Project.jsp?proj_Name=San%20Luis%20Unit%20Project

US EPA 2016 — U.S. Environmental Protection Agency (US EPA). 2016. *Superfund Site Information for Atlas Asbestos Mine*. May. https://cumulis.epa.gov/supercpad/cursites/dsp_ssppSiteData1.cfm?id=0901736

WWD 2006 — Westlands Water District (WWD). 2006. *Generalized Depth of Shallow Groundwater Surface (Map)*. April. http://wwd.ca.gov/wp-content/uploads/2015/07/April-20061.pdf

WWD 2012b — Westlands Water District (WWD). 2012. Rules and Regulations – Article 2. Regulations for Allocation and Use of Agricultural Water Within Westlands Water District. As revised January 17, 2012. http://wwd.ca.gov/wp-content/uploads/2014/04/article.2.pdf

WWD 2013 — Westlands Water District (WWD). 2013. *Water Management Plan – 2012*. April. http://wwd.ca.gov/wp-content/uploads/2015/09/water-management-plan-2012.pdf

WWD 2015 — Westlands Water District (WWD). 2015. *Generalized Depth of Shallow Groundwater Surface (Map)*. April. http://wwd.ca.gov/wp-content/uploads/2015/08/gdsgs-april-2015.pdf

WWD 2016 — Westlands Water District (WWD). 2016. *Deep Groundwater Conditions Report – December 2015*. April. http://wwd.ca.gov/wp-content/uploads/2016/05/2015-deep-groundwater-conditions-report.pdf

WWD 2017 — Westlands Water District (WWD). 2017. *Annual Water Use and Supply*. WWD Website. June. http://wwd.ca.gov/water-management/water-supply/annual-water-use-and-supply/

3.9. LAND USE AND PLANNING

3.9.1. ENVIRONMENTAL SETTING

Westlands Solar Park

Conditions within the WSP Plan Area

The WSP plan area consists almost entirely of agricultural land covered with field crops, fallow land, pasture, and some tree crops. The plan area is essentially level and lacking in topographical features except for irrigation canals and ditches with adjacent levees (see Figures AE-1a through AE-1e). There are no structures within the plan area apart from wells, piping and pump works associated with agricultural irrigation.

The WSP plan area is traversed by three improved County Roads including Avenal Cutoff Road, Laurel Avenue, and Nevada Avenue, in addition to shorter segments of other County roads. Several high voltage transmission corridors pass through the plan area, including 230-kV and 115-kV transmission lines in the northwest corner of the plan area, and a 70-kV transmission line that follows the 25th Avenue alignment through the eastern half of the plan area.

There is an active natural gas pipeline, owned and operated by Southern California Gas Company, which runs parallel and southeast of Avenal Cutoff Road through the plan area. A branch pipeline splits off at Laurel Avenue and runs eastward along the south side of Laurel to the community of Stratford.

There is one existing solar PV project within WSP. Located in the northeast corner of the WSP, at Avenal Cutoff Road and 25th Avenue, this 22 MW solar PV project (Westside Solar) was approved by Kings County in 2015. The 2 MW first phase was completed in 2016, and the remaining 20 MW is planned for construction in 2018. Currently, there is a second solar PV project proposed within the WSP plan area that is pending CUP approval by Kings County. This is the 250 MW Aquamarine Solar project, planned on a 1,860-acre site located on both sides of Laurel Avenue at the 25th Avenue alignment. The Aquamarine project is expected to receive County approval in late 2017, and is scheduled to commence construction in 2018.

Adjacent and Surrounding Land Use

The lands immediately surrounding the WSP plan area consist almost entirely of agricultural land, with occasional ranches and rural dwellings, and several newly constructed solar PV generating facilities (see Figure PD-2).

Ranches and Rural Residences

Adjacent to the plan area, there are two ranch complexes with dwellings, outbuildings, equipment yards, and associated landscaping. The Shannon Ranch complex, which is located just outside the plan area at the southwest corner of Avenal Cutoff Road and Lincoln/Gale Avenue, includes 20 residential units and a

number of ranch operations buildings (see Figure AE-1c). The Shannon Ranch also includes an airstrip located to the north across Gale Avenue. The second adjacent ranch is the Stone Land Company Ranch, which is located on the south side of Nevada Avenue, approximately 1.4 miles east of Avenal Cutoff Road, and includes two dwellings (see Figure AE-1d).

The lands surrounding the plan area are sparsely settled, with very few dwellings located within one mile of the WSP boundary (see Figure PD-2). In addition to the Shannon Ranch and Stone Land Company Ranch, next nearest dwellings are as follows: 4 dwellings at the Westlake Farms complex located on the east side of SR-41, one mile south of Nevada Avenue, and just over a half mile east of the southeastern WSP boundary; 2 dwellings at an unnamed ranch complex located on the east side of SR-41, one mile north of Nevada Avenue, and just over one mile east of the WSP plan area; and a series of 6 residences along and near 22nd Avenue which runs north-south about one mile from the WSP boundary. Also notable is the base housing area of NAS Lemoore located on the north side of SR-198, over 2 miles north of the plan area.

In summary, there are 34 existing rural residences located within approximately one mile of the WSP plan area. These include the 20 dwellings at the Shannon Ranch and 2 dwellings at the Stone Land Company Ranch located adjacent to the plan area, plus 12 other dwellings located to the east of the plan area.

Existing Solar PV Generating Facilities

There are 4 solar generating facilities within 1 mile of the WSP plan area. Immediately to the north along 25th Avenue are three Recurrent Energy projects (Mustang, Orion, and Kent South) totaling 200 MW on 1,822 acres, all of which are complete and operational. The fourth nearby solar project (Kettleman – 20 MW) is located on 220 acres on the west side of SR-41 immediately southeast of the southern-most portion of the WSP plan area. Located 3 miles north of Kettleman City, this solar project is also complete and operational. There are three additional solar facilities located between 2.5 and 5 miles east of WSP. These include the completed 20 MW Kansas and 20 MW Kansas South solar projects, located approximately 2.5 and 4 miles northeast, respectively, and the completed 136 MW Henrietta solar project which is located adjacent to SR-41 approximately 3 miles northeast of the WSP plan area (see Figure PD-2). As discussed above, there are also two pending and approved solar projects within the WSP plan area itself.

Other Surrounding Land Uses

Other notable land uses within one mile of the WSP plan area include: the Omaha Ranch, a dairy operation located on Omaha Avenue west of SR-41; and a vacant tomato processing plant located 0.4 miles north of WSP on the east side of 25th Avenue.

Notable land use features in the wider surrounding area include: Naval Air Station Lemoore, located two miles to the north; PGE's Henrietta Substation and GWF's natural gas peaker plant, located 1.5 miles northeast; the community of Stratford located 2.5 miles to the east; the City of Huron, located 6 miles west; PGE's Gates Substation, located 6 miles southwest; and the community of Kettleman City, located 2.5 miles south of the southern tip of the plan area. In addition, the San Luis Canal/California Aqueduct passes west of the WSP plan area, within 2.5 miles at its nearest point. Interstate 5 passes within 8 miles of the WSP plan area to the west. State Highways passing through the immediate vicinity

include SR-41 to the east, SR-198 to the north and SR-269 to the west. The major power transmission line in the vicinity is the 230-kV Henrietta-Gates line which passes through the northwest corner of the plan area.

WSP Gen-Tie Corridors

The land uses in the vicinity of the two WSP gen-tie corridors are described below. Existing residences within one mile of the corridors are numbered and listed in Table PD-7 and shown in Figure PD-7 in Chapter *2. Project Description*.

WSP-South to Gates Gen-Tie Corridor

As shown in Figure PD-7, this approximately 11.5-mile long 230-kV gen-tie corridor commences from the junction of Nevada Avenue and the 25th Avenue alignment, approximately midway between Avenal Cutoff Road and SR-41, in the central portion of the WSP plan area. From this location, the corridor heads west along the north side of Nevada Avenue alongside agricultural fields for a distance of about 5 miles to Avenal Cutoff Road and the Kings/Fresno county line where the roadway becomes Jayne Avenue in Fresno County. The Stone Land Company Ranch, described above, is located 1.4 miles east of the Fresno County line. Approximately 1 mile west of the county line, the corridor shifts northward about 800 feet to avoid the Giovannetti cooling facility and then shifts south to again run parallel to Jayne Avenue. The corridor continues westward across the San Luis Canal/California Aqueduct and along agricultural fields along Jayne Avenue for 4 miles to the junction of Lassen Avenue/SR-269. A row of 8 ranch dwellings is located on the south side of Jayne Avenue, approximately 1.3 miles east of SR-269. The gen-tie corridor extends an additional 1 mile through along agricultural fields to the Gates Substation.

WSP-North to Gates Gen-Tie Corridor

As shown in Figure PD-7, this approximately 11.5-mile long 230-kV gen-tie corridor commences from the northern portion of the WSP plan area, and heads southwestward along the south side the existing Henrietta-Gates 230 kV transmission line. The corridor passes through agricultural fields and orchards, crossing the San Luis Canal/California Aqueduct after 7 miles, and then crossing Lassen Avenue/SR-269 after an additional 3 miles, and then extends an additional 1.5 miles to the Gates Substation on the north side of Jayne Avenue. Within 1 mile of this gen-tie corridor, there are a total of 10 ranch dwellings, located at distances of 0.3 to 0.9 miles from the corridor.

3.9.2. REGULATORY SETTING

Federal

Naval Air Station Lemoore Joint Land Use Study

The NAS Lemoore Joint Land Use Study (JLUS) involved a multi-agency effort managed by the Department of Defense (DOD) for cooperative land use planning between NAS Lemoore and adjacent communities to provide for compatibility between future community growth and the training and operational missions of the military installation. The purpose of the JLUS is to protect the health and

safety of the civilian communities relative to aircraft approach and departure routes, and to discourage incompatible development in high noise areas and accident potential zones. The JLUS includes mapping of clear zones, accident potential zones (APZs), and flight corridors where the resulting aircraft noise levels on the ground are incompatible with noise-sensitive land uses. Since DOD has no regulatory authority for local land use outside the boundaries of the naval air station, the JLUS also includes planning recommendations for consideration by local jurisdictions. The findings and recommendations of the JLUS, as they pertain to the development of the WSP, are discussed in detail under Impact LU-3 below.

The JLUS mapping indicates that the southern end of the NAS Lemoore runway is 2.5 miles north of SR-198, and no designated clear zones or accident potential zones extend south of SR-198. The noise contour mapping prepared for the JLUS shows bands of noise contours exceeding 60 dB CNEL which correspond closely to the flight corridors surrounding the airfield (JLUSPC 2011). The aircraft noise corridor is reflected in the 2035 Kings County General Plan Land Use Map, which designates lands within a 3-mile buffer zone from the naval installation, plus the noise-impacted areas (exceeding 70 dB CNEL) south of the buffer zone, as "Exclusive Agriculture – 40 acre." The intent of this land use designation is to provide a safety buffer zone around the base by limiting and discouraging intensive agricultural and structure-based land uses that may pose increased risks to inhabitants and base operations (Kings County 2010a, p. LU-37). The AX land use designation generally corresponds to the "AX Exclusive Agriculture" zoning which applies to a 3-mile buffer zone south of NAS Lemoore where minimal structures are permitted and dairies are not permitted due to the potential effects of night lighting on flight operations. The JLUS also identifies height obstruction limits near NAS Lemoore, with the limits in a given area depending on its location relative to landing approach zones. The northern portion of the WSP plan area is partially within Height Restriction Zones "D" and "G" which both have height limits for ground structures of 500 feet above the ground surface (JLUSPC 2011, p. 2-24).

The JLUS included recommendations for implementation at the local level. For Kings County, the JLUS recommended the establishment of three "NASL Overlay District Zone" designations, with each zone corresponding to different set of land use compatibility concerns. Overlay Zone I covers lands immediately adjacent to NASL on the east and west. Overlay Zone II encompasses the 3-mile buffer zone plus surrounding areas where aircraft noise corridors exceed 70 dB CNEL. Overlay Zone III encompasses a broader area extending beyond Overlay Zone II by 1 to 5 miles. JLUS Recommendation 17 states: "Establish Minimum Technical Standards for Renewable Energy Facilities Located within NASL Overlay Zones I, II, and III (JLUSPC 2011, p. 2-51). This addresses the concern with "solar farms creating excessive glare from the reflection of the sun" (JLUSPC 2011, p. 2-9). The main concern is with concentrated solar power technologies which utilize as lenses or mirrors on a large scale with their reflective characteristics and tall tower collectors. However, "if there is no central collection tower, the new solar panels can be made non-reflective and arrays could be installed to not cause any height or reflective issues. Prior to the development of solar arrays within flight-sensitive areas, the height and effect of these installations along with the distribution system proposed to transmit the power from the source (solar farm) should be carefully considered" (JLUSPC 2011, p. 2-12). The potential hazard to flight operations is addressed in Impact LU-3 below.

State

Williamson Act

The California Land Conservation Act of 1965, commonly known as the Williamson Act, enables local governments to enter into contracts with private landowners for the purpose of placing lands within "Agricultural Preserves" thus restricting the use of those lands to agricultural or related open space use. The relevant provisions of the Williamson Act, including the 2011 amendments added by SB 618, are discussed in detail in Section *3.2. Agricultural Resources*.

Other State Regulatory Requirements and Programs

There are no other State of California land use regulatory requirements applicable to the project or the project site. The project is not located within two miles of a public use airport, or within an airport planning or noise hazard zone and therefore is not covered by the State Aeronautics Act. The project site is not located within the Coastal zone, and therefore is not subject to the California Coastal Act. Other State regulatory requirements or programs which may be applicable to the project are discussed under the corresponding environmental topic discussions in this EIR. For example, the Alquist-Priolo Earthquake Fault Zoning Act and Seismic Hazard Mapping Act are discussed in Section *3.6. Geology and Soils*.

California Public Utilities Commission

Transmission projects that are to be constructed by or for an investor-owned utility (IOU), such as PG&E, are subject to the sole permitting jurisdiction of the California Public Utilities Commission (CPUC). Under CPUC General Order 131-D, Section XIV.B, …"local jurisdictions are preempted from regulating electric power line projects, substations, or electric facilities constructed by public utilities subject to the Commission's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters (CPUC 1995). Transmission lines that may be privately owned (such as gen-ties) are not under CPUC jurisdiction, and thus are subject to local jurisdiction and may require the issuance of a conditional use permits from the Kings County and Fresno County.

Kings County

2035 Kings County General Plan

There are two agricultural general plan land use designations that together cover the Westlands Solar Park. These include "General Agriculture – 40 acre" which covers approximately 65 percent of the plan area, and "Exclusive Agriculture – 40 acre" which covers approximately 35 percent of the plan area. The General Agriculture designation generally applies to areas south of Kansas Avenue, and the Exclusive Agriculture designation applies to areas within the flight paths of the Naval Air Station Lemoore. Both of these designations fall under the broader General Plan category of Agricultural Open Space. In addition to a range of agricultural uses and ancillary activities, the General Plan allows solar voltaic generating facilities within the Agricultural Open Space areas of the County, as set forth in LU Policy B7.1.3, which is reproduced below. Energy producing facilities are allowed in the Exclusive Agriculture zone where such facilities would not create a hazard for aircraft, as set forth in RC Policy A1.2.4, as shown below (Kings County 2010a).

The 2035 Kings County General Plan includes the following goals, objectives and policies related to land use that are relevant to the Westlands Solar Park:

Land Use Element

B. Agricultural Open Space

LU GOAL B7 *Community benefiting non-agricultural uses remain compatible within the County's Agricultural Open Space area, and are supported for their continued operation and existence.*

LU OBJECTIVE B7.1 *Allow compatible Open Space and Public uses of land within the Agriculture Open Space area of the County.*

LU Policy B7.1.3: Power generation facilities for commercial markets shall be allowed and regulated through the Conditional Use Permit approval process, and include thermal, wind, and solar photovoltaic electrical generating facilities that produce power.

Resource Conservation Element

G. Energy Resources

RC OBJECTIVE G1.2 *Promote the development of sustainable and renewable alternative energy sources, including wind, solar, hydroelectric and biomass energy*.

RC Policy G1.2.2: Encourage and support efforts to develop commercial alternative energy sources in lower priority agricultural lands within Kings County, when appropriately sited.

RC Policy A1.2.4: Coordinate the siting of alternative energy facilities within the Exclusive Agriculture (AX) Zone District with the Naval Air Station Lemoore to ensure such facilities will not have the potential to create a hazard for aircraft (e.g., reflective solar panels).

RC Policy A1.2.5: Site new large-scale alternative energy facilities where they can be served by existing electrical transmission lines, or where such lines can be located and designed to minimize visual, environmental, and agricultural disturbances.

RC Policy A1.2.7: Require commercial solar and wind energy systems to be reviewed as a conditional use permit pursuant to the procedures of the Kings County Zoning Ordinance (superseded by the Kings County Development Code).

Kings County Development Code

Agricultural Zoning

The Kings County Zoning Plan is incorporated by reference in Section 201 of the Kings County Development Code. As designated in the Kings County Zoning Plan, the majority of WSP plan area is currently zoned as "AG-40 General Agriculture-40," except for approximately 930 acres north of the Kansas Avenue alignment which are zoned "AX Exclusive Agriculture" (Kings County 1964). As provided in Article 4 of the Kings County Development Code, both of these agricultural zoning districts specifically allow utility-scale photovoltaic electricity generation as a conditionally permitted use. Under Section 1112.B.2 of the Development Code, all solar photovoltaic electrical facilities for commercial sales and distribution of electrical power in agricultural zones are required to meet the following standards for CUP approval:

a. The proposed site shall be located in an area designated as either "Very Low Priority," "Low Priority," or "Low-Medium Priority" land according to Figure RC-13 Priority Agricultural Land (2035 Kings County General Plan, Resource Conservation Element, page RC-20). "Medium Priority" land may be considered when comparable agricultural operations are integrated, the standard mitigation requirement is applied, or combination thereof.

b. The proposed site shall be located within 1 mile of an existing 60 KV or higher utility electrical line. Small community commercial solar projects (less than or equal to 3 MW) may be located more than 1 mile from a 60 kV or higher transmission line subject to the following findings:

- *The project site is located on low or very low priority farmland.*
- *The project site is not restricted by a Williamson Act or Farmland Security Zone contract.*
- *The project will connect to existing utility infrastructure without building new power lines.*
- *The project will not result in any additional easements on agricultural land, other than access easements or easements within the public Right-of-Way.*

c. Agricultural mitigation shall be proposed for every acre of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance converted for a commercial solar facility. The agricultural mitigation shall preserve at a ratio of 1:1 an equal amount of agricultural acreage of equal or greater quality in a manner acceptable to the County for the life of the project. Agricultural mitigation on land designated "Medium-High" or higher priority land shall preserve an equivalent amount of agricultural acreage at a ratio of 2:1.

d. The project shall include a reclamation plan and financial assurance acceptable to the County that ensures the return of the land to a farmable state after completion of the project life, and retains surface water rights.

e. The project shall include a pest management plan and weed abatement plan to protect adjacent farmland from nuisances and disruption.

f. The project shall space internal access driveways per Kings County Fire Department Standards.

Discussion. As required, each WSP solar project would space internal access driveways *per Kings County Fire Department Standards* intervals of 300 feet or less. Therefore, this standard would be met for each WSP solar project.

g. The project shall include a solid waste management plan for site maintenance and disposal of trash and debris.

h. The project site shall not be located on Williamson Act or Farmland Security Zone contracted land, unless it meets the principles of compatibility under Government Code section 51238.1(a). Otherwise, the contract shall be proposed for cancellation.

A detailed analysis of the ability of WSP solar development to satisfy each of the above standards is presented in Section *3.2. Agricultural Resources*, under Impact AG-2.

In addition, utility structures are permitted uses in both Agricultural zoning districts covering the WSP plan area (Kings County 2016b).

Since the primary objective of agricultural zoning districts is to protect agricultural operations, Section 402 of the Development Code sets forth the agriculture protection policy. This policy is intended to ensure that non-agricultural uses in agricultural zones are aware that their non-agricultural uses in agricultural zones are subservient to permitted agricultural pursuits and that the undertaking of normal, customary, and legal agricultural activities may result in inconveniences to them due to their location in areas of commercial agricultural activities and operations. (See also "Right-to-Farm Ordinance" below.)

Conditional Use Permit Procedures

Article 17 of the Kings County Development Code sets forth the detailed submittal requirements and review and approval procedures for Conditional Use Permits. The Planning Commission has the authority to grant conditional use permits and to impose appropriate conditions. The Planning Commission's decisions on conditional use permits are subject to appeal and review by the County Board of Supervisors.

Right-to-Farm Ordinance

The Kings County Code of Ordinances Section 14-38 requires the approvals of rezonings, land divisions, zoning permits, and residential building permits include a condition that notice and disclosure be provided, which is to be recorded with the property title, that specifically acknowledges and notifies all future owners that they are in proximity to agricultural uses, and lists the types of operations and possible nuisances or inconveniences associated with farming such as equipment and animal noises; farming activities conducted on a 24-hour, 7-day a week basis; odors from manure, fertilizers, pesticides, chemicals, or other sources; the aerial and ground application of chemicals and seeds, dust; flies and other insects; and smoke. The ordinance states that the County does not consider normal farming operations involving these activities and effects to be a nuisance. This right-to-farm disclosure and acknowledgement establishes the primacy of agricultural operations over other land uses, and would reduce the potential for conflict which could adversely affect the continued viability of such adjacent agricultural operations (Kings County 2002a).

Fresno County

Fresno County General Plan

All lands crossed by the WSP gen-tie segments in Fresno County are designated "Agriculture" in the Fresno County General Plan. The Agriculture and Land Use Element of the General Plan allows electrical substations in Agriculture-designated lands, but transmission lines are not specifically mentioned (Fresno County 2000c).

Fresno County Zoning Code

The gen-tie segments crossing Fresno County are all zoned as either "AE 20 Exclusive Agricultural" or "AE 40 Exclusive Agricultural" (Fresno County 2017c). The Fresno County Zoning Code permits electrical substations in agricultural zones subject to Director's review and approval. Utility structures such as transmission lines are permitted with an Unclassified Conditional Use Permit under Zoning Code Section 853(B)14 (Fresno County 2011).

3.1.3. ENVIRONMENTAL IMPACT ANALYSIS

SIGNIFICANCE CRITERIA

Based on the State CEQA Guidelines, Appendix G, the project would be considered to result in a significant land use and planning impact if it would:

a. Physically divide an established community. (Impact LU-1)

b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental impact. (Impact LU-2)

c. Conflict with any applicable habitat conservation plan or natural community conservation plan. (Impact LU-4)

In addition, a WSP solar project or WSP gen-tie project would result in a significant land use impact if it would:

d. Result in conflicts or incompatibility with existing land uses or planned developments in the vicinity. (Impact LU-3)

IMPACTS AND MITIGATION

Impact LU-1. Physically Divide an Established Community

***Westlands Solar Park*. The WSP plan area is not located within or near any established community; therefore, WSP solar development would not physically divide an established community. (*No Impact*)**

***WSP Gen-Tie Corridors*. The lands traversed by the gen-tie corridors consist entirely of rural lands and include no established communities; therefore, the WSP gen-tie projects would not physically divide an established community. (*No Impact*)**

This impact analysis addresses significance criterion 'a' above.

Westlands Solar Park

The WSP plan area is located in a rural area within unincorporated Kings County. The nearest established communities are the unincorporated community of Stratford located 2.5 miles east of the plan area, the unincorporated community of Kettleman City located 2.5 miles south of the plan area, and the City of Huron located 7 miles west of the plan area. The Westlands Solar Park is not located within or near any other established communities. Therefore, the WSP solar development would have *no impact* in terms of its potential to physically divide an established community.

WSP Gen-Tie Corridors

The lands traversed by the gen-tie corridors consist entirely of rural lands and include no established communities. The nearest community is the City of Huron which is located 2.6 miles from the WSP-North to Gates Gen-Tie. Therefore, the WSP gen-tie projects would have no impact in terms of potential to physically divide an established community.

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

Impact LU-2. Conflict with Applicable Land Use Plan, Policy, or Regulation

***Westlands Solar Park*. The WSP solar development is consistent with applicable Kings County General Plan designations and policies, and zoning regulations; therefore, the WSP solar development would not conflict with an applicable land use plan, policy, or regulation. (*No Impact*)**

***WSP Gen-Tie Corridors*. The gen-tie projects are consistent with applicable General Plan designations and policies, and zoning regulations of Kings County and Fresno County; therefore, the WSP gen-tie projects would not conflict with an applicable land use plan, policy, or regulation. (*No Impact*)**

This impact analysis addresses significance criterion 'b' above.

Westlands Solar Park

General Plan

Land Use Designations

The 2035 Kings County General Plan applies two agricultural land use designations to the WSP plan area. These include "General Agriculture – 40 acre" which covers approximately 65 percent of the plan area, and "Exclusive Agriculture – 40 acre" which covers approximately 35 percent of the plan area. The General Agriculture designation generally applies to areas south of Kansas Avenue, and the Exclusive Agriculture designation applies to areas within the flight paths of the Naval Air Station Lemoore. Both of these designations fall under the broader General Plan category of Agricultural Open Space. In addition to a range of agricultural uses and ancillary activities, the General Plan allows solar voltaic generating facilities within the Agricultural Open Space areas of the County, as set forth in LU Policy B7.1.3 (see Section *3.9.2. Regulatory Setting* above). Therefore, the planned installation of solar PV generating facilities within the WSP plan area would be consistent with the General Plan Land Use Element.

General Plan Policies

The following discussion addresses the consistency of WSP solar development with the major General Plan policies that relate to solar development.

LU Policy B7.1.3 provides that solar power generation facilities shall be allowed and regulated through the Conditional Use Permit approval process. Proponents for solar PV generating facilities planned within the WSP plan area would submit applications for CUP approval and would implement the conditions of approval specified by the County. As such, the solar facilities to be developed within the WSP plan area would be consistent with this policy, and this would represent a *less than significant* impact in terms of consistency with General Plan policy.

RC Policy G1.2.2 encourages and supports development of commercial alternative energy sources in lower priority agricultural lands within Kings County. According to the Resource Conservation Element Figure RC-13 (Priority Agricultural Land), over 91 percent of the WSP plan area is categorized as Very Low, Low, or Low-Medium Priority Agricultural Land, with 7 percent in Medium Priority, 2 percent in Medium-High

Priority, and 0.0 percent in High Priority Agricultural Land. Since 91 percent of the WSP plan area is in the lower 3 of the 6 priority categories, the development of the WSP plan area for solar PV generating facilities is largely consistent with the policy that encourages such development in lower priority agricultural lands. This would represent a *less than significant* impact in terms of consistency with General Plan policy.

Under RC Policy A1.2.4, the siting of alternative energy facilities within the "AX Exclusive Agriculture" Zone District is to be undertaken in coordination with the Naval Air Station Lemoore to ensure such facilities will not have the potential to create a hazard for aircraft (e.g., reflective solar panels). As discussed under "Zoning" below, approximately 930 acres north of the Kansas Avenue alignment are zoned "AX Exclusive Agriculture." This comprises less than 1.5 sections of land in the northern tier of the WSP plan area, or less than 5 percent of the total WSP land area. As discussed in detail in Section 3.7. *Hazards and Hazardous Materials* (under Impact HAZ-10), solar PV employs panels that are designed to maximize absorption and minimize reflection in order to increase electricity production efficiency. To limit reflection, solar PV panels are constructed of dark, light-absorbing materials, and are given an anti-reflective coating or textured surface. With the addition of the anti-reflective coating or treatment, the reflectivity can be reduced to less than 4 percent of incoming sunlight. Since the solar panels would have low reflective intensity and would be covered with anti-reflective coating, any resulting glare effects would minimal and would not disrupt aircraft operations in the area.

As discussed in Section *3.1.2. Regulatory Setting* above, the NAS Lemoore Joint Land Use Study (JLUS) addresses concerns with aviation hazards from reflection and glare. Solar facilities are mentioned specifically for their potential to produce reflective surfaces, but the JLUS acknowledged that the main concern was with highly reflective mirrors used in concentrated solar facilities. The JLUS acknowledges that "if there is no central collection tower, the new solar panels can be made non-reflective and arrays could be installed to not cause any height or reflective issues." In summary, the solar PV panels to be installed within the WSP plan area would not pose a potential hazard to aircraft operations at NAS Lemoore due to reflected glare. As such, future coordination with NAS Lemoore regarding the siting of solar facilities in the northern portions of the WSP plan area are expected to result in concurrence with this finding, in that the installation of solar PV generating facilities would not be found to be inconsistent with the General Plan RC Policy A1.2.4 regarding siting of alternative energy facilities in proximity to NAS Lemoore flight patterns. Therefore, the development of solar PV generating facilities within the WSP plan area would not be inconsistent with RC Policy A1.2.4, and the impact regarding plan consistency would be *less than significant*.

RC Policy A1.2.5 provides that new large-scale alternative energy facilities should be sited near existing electrical transmission lines, or where such lines can be located and designed to minimize visual, environmental, and agricultural disturbances. As discussed, the WSP solar development would be served by two new generation-interconnection tie-lines ("gen-ties") which would convey WSP solar generation to the Gates Substation located 11 miles to the west. The "WSP-North to Gates Gen-Tie" would run parallel to the existing 230-kV Henrietta-Gates line that passes through the northwest corner of the plan area. The "WSP-South to Gates Gen-Tie" would run along the Nevada/Jayne Avenue roadway corridor from the central plan area to the Gates substation. These planned gen-tie routes conform with the State's Garamendi Principles for siting of new transmission lines, which encourages new transmission lines to be routed parallel to existing transmission lines or roadway corridors. As discussed in Sections *3.1. Aesthetics, 3.2. Agricultural Resources, and 3.4. Biological Resources,* the construction of these planned gen-tie lines would result in less-than-significant impacts to agricultural

and biological resources, and would not result in significant visual impacts. Since the WSP generating facilities would utilize gen-tie transmission routes along existing transmission or roadway corridors where they would minimize visual, environmental, and agricultural disturbances, WSP solar development would be consistent with RC Policy A1.2.5, and the impact in terms of plan consistency would be *less than significant*.

In summary, the solar development of the WSP plan area would be consistent with the major General Plan policies that specifically apply to alternative energy development. Therefore, the impact of WSP solar development in terms of General Plan consistency would be *less than significant*.

It is noted that there are a number of other General Plan policies applicable to WSP solar development that are contained in General Plan elements related to Resource Conservation, Open Space, Circulation, Health and Safety, Noise, and Air Quality. These General Plan policies are enumerated in the sections of this EIR where those environmental topics are addressed. For example, the applicable agricultural policies of the Resource Conservation Element are contained in Section *3.2. Agricultural Resources*.

Zoning

Under the Kings County Development Code, the majority of WSP plan area is currently zoned as "AG-40 General Agriculture-40," except for an area of approximately 930 acres north of the Kansas Avenue alignment which is zoned "AX Exclusive Agriculture." As provided in Article 4 of the Kings County Development Code, both of these agricultural zoning districts specifically allow utility-scale photovoltaic electricity generation as a conditionally permitted use. Both zoning districts have a general minimum parcel size requirement of 40 acres, except that parcel sizes as small as one acre are permitted for a range of uses, including solar voltaic generating facilities, subject to the granting of a conditional use permit. The sponsors of solar PV generating facilities within the WSP plan area would submit applications for Conditional Use Permits for those projects. It is expected that County staff would ensure that other applicable zoning standards would be adhered to and that conditions of approval would be implemented in conjunction with the solar projects. As such, the solar facilities installed within the WSP plan area would be consistent with the Kings County Development Code, and the impact regarding zoning consistency would be *less than significant*.

Conditional Use Permit and Site Plan Review

As discussed in Section *3.9.2. Regulatory Context* above, solar development under the WSP Master Plan will be subject to the County's Conditional Use Permit approval process. This process encompasses matters addressed in this EIR but also entails a level of detail that will not be available until submittal of detailed site plans and supporting material. It is expected that the County staff will ensure that all County requirements applicable to the design and operation of the individual solar projects within WSP will be fully reflected in the approved plans and conditions of approval.

In summary, planned WSP solar development is consistent with the County's land use plans, policies, and regulations. It is anticipated that County staff will ensure that applications for solar development projects within WSP will adhere to the requirements of the County's Conditional Use Permit application process and will implement conditions of project approval specified by the County. As such, the planned WSP solar development would be consistent with the County's applicable land use plans, policies, and

regulations. Therefore, the impact of solar development within the WSP plan area with regard to consistency with plans, policies, and regulations would be *less than significant*.

WSP Gen-Tie Corridors

Kings County

The eastern segments of both WSP gen-tie corridors are located in Kings County. The WSP-South to Gates Gen-Tie corridor crosses lands designated "General Agriculture – 40 acre" and "Exclusive Agriculture – 40 acre." The WSP-North to Gates Gen-Tie corridor traverses lands designated "Exclusive Agriculture – 40 acre." The corresponding zoning districts are the "AG-40 General Agriculture-40" district and "AX Exclusive Agriculture" district. As provided in Article 4 of the Kings County Development Code, both of these agricultural zoning districts allow utility structures such as transmission lines and substations as permitted uses. As such, the construction of the Kings County segments of the gen-tie projects would be consistent with the applicable Kings County General Plan and Development Code provisions.

Fresno County

The major portions of both WSP gen-tie corridors are located in Fresno County. The lands traversed by the gen-tie corridors are designated "Agriculture" in the Fresno County General Plan, and are zoned as either "AE 40 Exclusive Agricultural" or "AE 40 Exclusive Agricultural in the County's Zoning Code. The Agriculture and Land Use Element of the General Plan allows electrical substations in Agriculture-designated lands. Electrical transmission lines are not specifically mentioned in the General Plan, but are assumed to be allowed since the Fresno County Zoning Code permits utility structures such as transmission lines with an Unclassified Conditional Use Permit. As such, the construction of the Fresno County segments of the transmission corridors would be consistent with the applicable Fresno County General Plan and Zoning Code provisions.

In conclusion, the WSP gen-tie projects are consistent with the applicable General Plans and Development Code/Zoning Ordinance of Kings County and Fresno County. Therefore, the impact of the WSP gen-tie projects regarding consistency with plans, policies, and regulations would be *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

Impact LU-3. Results in Conflicts or Incompatibility with Existing Land Uses

***Westlands Solar Park*. The WSP solar development would occur within the flight operations area of NAS Lemoore, and would occur in proximity to existing residences; however, WSP solar development**

would not result in significant conflicts or incompatibility with these activities and land uses. The WSP solar development may adversely affect nearby agricultural operations through increased dust generation during construction, and through potential introduction of weedy species during operation. . (*Less-than-Significant Impact with Mitigation*)

***WSP Gen-Tie Corridors*. The gen-tie projects would occur in proximity to existing agricultural operations and existing residences; however, the WSP gen-tie projects would not result in significant conflicts or incompatibility with existing residences. However, the construction of the gen-tie lines would result in the permanent loss of farmland, possible destruction of existing crops and damage to farming infrastructure, as well as restricted access to farmlands during construction. (*Less-than-Significant Impact with Mitigation*)**

This impact analysis addresses significance criterion 'd' above.

Westlands Solar Park

Compatibility with Naval Air Station Lemoore

The northern boundary of the WSP plan area is 2 miles south of and parallel to the southern boundary of Naval Air Station Lemoore (see Figure PD-2). As discussed in Section *3.9.1. Regulatory Setting* above, in 2011 the Department of Defense (DOD) completed the NAS Lemoore Joint Land Use Study (JLUS), a multi-agency effort for cooperative land use planning between NAS Lemoore and adjacent communities to provide for compatibility between future community growth and the training and operational missions of the military installation (JLUSPC 2011). The purpose of the JLUS is to protect the health and safety of the civilian communities relative to aircraft approach and departure routes, and to discourage incompatible development in high noise areas and accident potential zones. The JLUS includes mapping of clear zones, accident potential zones (APZs), and flight corridors where the resulting aircraft noise levels on the ground are incompatible with noise-sensitive land uses.

The JLUS included recommendations for implementation at the local level. For Kings County, the JLUS recommended the establishment of three "NASL Overlay District Zone" designations, with each zone corresponding to different set of land use compatibility concerns. Overlay Zone I covers lands immediately adjacent to NASL on the east and west, and reflects areas within the APZs. Overlay Zone II encompasses the 3-mile buffer zone plus surrounding areas where aircraft noise corridors exceed 70 dB CNEL. Overlay Zone III, which includes the remainder of the JLUS study area, which extends 11 miles south of SR-198. No portion of the WSP plan area is included in Zone I, while Zones II and III cover the northern and central portions of the plan area. These overlay zones relate to potential incompatible uses that could affect operations at the military installation. Of particular concern are accident potential, height obstructions and reflection and glare, which are discussed in turn below.

Accident Potential Zones

The JLUS mapping indicates that the southern end of the NAS Lemoore runway is 2.5 miles north of SR-198, and no designated clear zones or accident potential zones (APZs) extend south of SR-198. This is reflected in the Zone I coverage, which is entirely north of SR-198. Since the nearest boundary of Zone I

is at least 2 miles north of the WSP plan area, the potential for aircraft accidents is not a concern for solar facilities within WSP.

Aircraft Noise

The noise contour mapping prepared for the JLUS shows bands of noise contours exceeding 60 dB CNEL which correspond closely to the flight corridors surrounding the airfield (JLUSPC 2011). In the JLUS, this area is designated as Overlay Zone II. The aircraft noise zone is reflected in the 2035 Kings County General Plan Land Use Map, which designates lands within a 3-mile buffer zone from the installation, plus the noise-impacted areas (exceeding 70 dB CNEL) south of the buffer zone, as "AX, Exclusive Agriculture – 40-acre minimum." The intent of this land use designation is to provide a safety buffer zone around the base by limiting and discouraging intensive agricultural and structure-based land uses that may pose increased risks to inhabitants and base operations (Kings County 2010a, p. LU-37). As noted previously, approximately 35 percent of the WSP plan area is included in the AX General Plan designation that is reflective of the high noise contours associated with the naval aircraft flight patterns. Solar PV generating facilities have a very low intensity of human activity, and are not noise sensitive land uses. Thus WSP solar development would not be incompatible with high noise levels from overhead flight operations. This is reflected in the AX General Plan designation, which allows large scale solar generation facilities as conditionally permitted uses.

Height Obstruction Limits

The JLUS also identifies height obstruction limits near NAS Lemoore, with the limits in a given area depending on its location relative to landing approach zones. The northern portion of the WSP plan area is partially within Height Restriction Zones "D" and "G" which both have height limits for ground structures of 500 feet above the ground surface (JLUSPC 2011, p. 2-24). The tallest facilities associated with the WSP solar facilities would be the following: transmission towers, which may be as high as 175 feet; power collection poles, which may be as high as 70 feet; some substation elements, which may reach a height of 125 feet; the O&M buildings, which may be as high as 20 feet; the inverters, which may be as high as 12 feet; and the solar arrays, which may reach as high as 10 feet at their maximum inclination. Thus all structures associated with WSP solar facilities would be well below the NAS Lemoore 500-foot limit for this area and would not create operational obstructions.

Reflected Glare

JLUS Recommendation 17 states: "Establish Minimum Technical Standards for Renewable Energy Facilities Located within NASL Overlay Zones I, II, and III (JLUSPC 2011, p. 2-51). The concern is with "solar farms creating excessive glare from the reflection of the sun" (JLUSPC 2011, p. 2-9). The specific concern is with concentrated solar power technologies which utilize lenses or mirrors on a large scale to focus reflected sunlight on tall tower collectors, which can reach heights of over 400 feet. However, "if there is no central collection tower, the new solar panels can be made non-reflective and arrays could be installed to not cause any height or reflective issues. Prior to the development of solar arrays within flight-sensitive areas, the height and effect of these installations along with the distribution system proposed to transmit the power from the source (solar farm) should be carefully considered" (JLUSPC 2011, p. 2-12). The JLUS acknowledges that "if there is no central collection tower, the new solar panels can be made non-reflective and arrays could be installed to not cause any height or reflective issues." The potential for reflected glare to pose an aviation hazard is analyzed in detail in Section *3.7. Hazards and Hazardous Materials*, where it is concluded that the PV solar panels are light-absorptive and produce very

little reflectivity. Therefore, the PV solar development within WSP would not pose a reflectivity or glare hazard to flight operations at NAS Lemoore.

In summary, the solar PV development planned for WSP would not result in any land use conflicts, incompatibility, or an increase in hazardous conditions with respect to flight operations at the Lemoore Naval Air Station. Therefore, the potential land use impacts associated with WSP solar development relative to NAS Lemoore would be *less than significant*.

Compatibility with Nearby Agricultural Land Uses

The WSP plan area is largely surrounded by active agricultural operations. Non-agricultural land uses can have potentially adverse effects on existing agricultural operations; and conversely, agricultural operations can result in impacts to non-agricultural development. The potential for land use conflicts between the WSP solar generating facilities and adjacent agricultural operations is discussed in detail in Section *3.2. Agricultural Resources* (under Impact AG-3), and summarized below.

Potential Impacts of Solar Development on Agriculture

Due to the relatively low intensity of the solar facility operations, the potential for impacts to adjacent agricultural lands is generally low. The primary concerns are with windblown dust and potential introduction of invasive weedy species, as discussed in turn below.

Grading and construction for solar facility development would expose soils to wind erosion and increase the potential for dustfall on agricultural crops located downwind. Increased dustfall could inhibit photosynthesis and result in reduced crop yields. However, implementation of dust control measures during construction, as specified in Mitigation Measure AQ-1, and as required for each WSP solar project under measures specified in Dust Control Permits issued by the SJVAPCD would reduce potential dust impacts to *less-than-significant* levels. Therefore, this impact would be *less than significant with mitigation*. (For a full discussion, see Section *3.3. Air Quality and Climate Change* [under Impact AQ-1].)

Development of the solar facilities could also result in the introduction of invasive weed species to the area, which could interfere with nearby crops. However, the potential for invasive weed species would be minimized at each WSP solar project through implementation of Mitigation Measure AG-1 which requires that an Agricultural Management Plan (AMP) be prepared and implemented for each solar project. The AMPs would require revegetation with weed-free seed mix and weed free mulch, and sheep grazing to control vegetation growth. The introduction of weeds would be further minimized through implementation of the Weed Abatement Plan required under Article 11, Section 1112.B.2.e of the Kings County Development Code. These measures would reduce the potential impact of invasive weed species to less-than-significant levels. Therefore, this impact would be *less than significant with mitigation*. (For a full discussion, see Section *3.2. Agricultural Resources* [under Impact AG-1].)

Potential Impacts of Agricultural Activities on Solar Facilities

The potential for agricultural operations to affect the WSP solar facilities would be limited to occasional dustfall due to plowing of adjacent fields, and possibly some pesticide drift due to spraying of nearby orchards. Since solar generating facilities are less sensitive to occasional dust, pesticide drift, noise, and odors than other land uses such as residential development, the potential for adverse effects to solar

facilities is relatively low. The primary concern would be with windblown dust from nearby agricultural fields, which WSP solar facilities would address through regular panel washings as part of their routine operations and maintenance activities. The regular panel washing would minimize the potential reduction in solar generating efficiency resulting from panel soiling. Therefore, the potential impacts on WSP solar facilities resulting from nearby agricultural operations would be *less-than-significant*.

In summary, the potential land use conflicts posed by dust generation during solar development and potential introduction of invasive weedy species would be mitigated through implementation of MM AQ-1 and MM AG-1, respectively, which would require dust mitigation and agricultural management measures to be implemented in conjunction with each solar project. Therefore, the potential impact of WSP solar development in terms of compatibility with existing agricultural uses in the area would be *less than significant with mitigation*.

WSP Compatibility with Nearby Residential Land Uses

As discussed in Section *3.9.1. Environmental Setting*, there are 34 existing rural residences located within approximately one mile of the WSP plan area. These include 20 dwellings at Shannon Ranch and 2 dwellings at Stone Land Company Ranch, located adjacent to the plan area, plus 12 other dwellings located from ½ mile to one mile east of the plan area (see Figure PD-2).

The principal sources of conflicts or incompatibility that might arise between the WSP solar facilities and nearby residences include aesthetics, lighting, and noise. The potential visual and lighting impacts are addressed in detail in Section *3.1. Aesthetics*, and the potential noise impacts are addressed in Section *3.10. Noise*. These discussions are summarized below as they apply to the residential properties that are potentially affected by WSP solar development.

Shannon Ranch

Located at the southwest corner of Avenal Cutoff Road and Lincoln/Gale Avenue, the ranch includes 20 single-family residences along with a number of operations buildings (e.g., office, machine shop, storage barns, etc.). The WSP solar arrays would be installed on the east side of Avenal Cutoff Road opposite the Shannon Ranch, and also along the north side of a short segment of Lincoln/Gale Avenue. Six of the Shannon Ranch residences are located along the Avenal Cutoff Road frontage and would be approximately 200 feet from the nearest solar arrays across the road to the east. One dwelling is located along the Lincoln/Gale Avenue frontage and would be located approximately 130 feet from the nearest solar arrays. The remaining 13 dwellings would be at located 400 to 700 feet from the nearest solar arrays. Along both roadway frontages, densely planted and tall landscaping would almost completely screen the Shannon Ranch residences from the planned solar arrays (see Figure AE-1c (photo 5). Given the screening effect of the existing landscaping and the distances separating the dwellings from the planned solar arrays, the visual impacts to the Shannon Ranch would be less than significant.

With respect to lighting, the WSP solar facilities would include permanent lighting only at the substations and operations yards, with the solar fields remaining unlit except for times when mobile lighting would be used for nighttime repairs. During construction, the staging areas would have security lighting, and mobile lighting would be necessary when construction continues into nighttime hours. Since it is not anticipated that any substations or operations centers would be located near the Shannon Ranch, the existing ranch dwellings may be subject to temporary night lighting during construction and occasional repair activity.

Any lighting at the nearby solar facilities would be largely screened by the existing dense landscaping along the ranch perimeter. Therefore, the potential lighting impacts at Shannon Ranch would be less than significant.

Regarding potential noise impacts, solar facilities generate very low levels of noise during operation. During construction, relatively high noise levels would be generated by heavy equipment and vehicles. However, construction activity would be progressive and take place for relatively short periods at any given location. Construction activity would occur in proximity to the nearest dwellings at Shannon Ranch and would be noticeable to the residents. However, as discussed in Section *3.10. Noise*, the noise impacts at the nearest sensitive receivers within Shannon Ranch would be less than significant.

Stone Land Company Ranch

This large ranch complex is located on the south side of Nevada Avenue, opposite the WSP plan area and approximately 1.4 miles east of Avenal Cutoff Road. The ranch includes 2 single-family dwellings that are each located approximately 150 feet from the roadway centerline, and would be at least 215 feet from the nearest solar arrays. The residential views of the solar arrays would be largely screened by a number of existing mature landscape trees planted in the front yards of these dwellings (see Figure AE-1d (photo 7)). Given the distance separating these two residences from the nearest solar arrays, and the visual screening provided by the existing residential landscaping at the ranch, the visual impact to these ranch dwellings would less than significant.

Regarding potential lighting impacts, it is not expected that any facilities with permanent lighting, such as substations and operations yards, would be located near the Stone Land Company Ranch. While temporary lighting may be required during construction and occasionally during facility operations, the visual screening provided by the dense landscaping along the ranch frontage would minimize any lighting impacts.

Regarding potential noise impacts, the highest noise levels associated with solar development in the vicinity of the dwellings at Stone Land Company Ranch would occur temporarily while construction activity is ongoing nearby. However, as discussed in Section *3.10. Noise*, the noise impacts at the sensitive residential receivers within Stone Land Company Ranch would be less than significant.

Other Residences in the WSP Vicinity

Other residences within about one mile of the WSP plan area include the following: 4 dwellings at the Westlake Farms complex located on the east side of SR-41, one mile south of Nevada Avenue, and just over a half mile east of the southeastern WSP boundary; 2 dwellings at an unnamed ranch complex located on the east side of SR-41, one mile north of Nevada Avenue, and just over one mile east of the WSP plan area; and a series of 6 residences along and near 22nd Avenue which runs parallel to the WSP boundary about one mile to the east. At these distances, some solar facilities, such as the taller structural elements of the substations or the gen-tie towers, might be visible, but the lower profile solar arrays would not be visible. The overall visual effect of the WSP solar facilities on these residences would be negligible at these distances.

With respect to lighting, these residences would be too far from the WSP plan area to be adversely affected by the low levels of lighting anticipated from the solar facilities.

Regarding potential noise impacts, construction noise from WSP solar development may be audible at these residences, but at distances of at least ½ mile from the nearest noise sources, the noise impact at any of these dwellings would be less than significant.

In summary, the potential land use conflicts associated with potential visual, lighting, or noise impacts from WSP solar development would be less than significant for all nearby residences. Therefore, the potential impact of WSP solar development in terms of compatibility with existing residential uses in the area would be *less than significant*.

WSP Gen-Tie Corridors

Compatibility with Agricultural Uses

As discussed in Section *3.2. Agricultural Resources*, almost all of the lands traversed by the gen-tie corridors are under cultivation for row crops or tree crops. As discussed, the construction of the gen-tie lines would result in the permanent loss of farmland, possible destruction of existing crops and damage to farming infrastructure, as well as restricted access to farmlands during construction. These permanent and temporary impacts to agricultural operations would be avoided or mitigated to the extent feasible through implementation of Mitigation Measures AG-4 and AG-5. Therefore, the impact of gen-tie construction upon existing agricultural operations would be *less than significant with mitigation.* (For a full discussion, see Section *3.2. Agricultural Resources* [under Impact AG-2].)

Upon completion of gen-tie lines, agricultural operations could continue within the transmission easements and around the towers, although minor adjustments to agricultural operations would likely be needed. Farming activities would require additional passes for tilling, planting, and harvesting to maneuver around tower structures. Aerial applicators (crop dusters) would likely need to make additional passes around transmission lines and towers to achieve full coverage of application. However, these effects would be minimized by routing the transmission lines adjacent to existing transmission or roadway corridors, as planned. The overall impact of transmission line operation upon agricultural operations would be *less than significant*.

Compatibility with Existing Residential Uses

As discussed in Section *3.9.1. Environmental Setting*, there are a total of 20 existing rural dwellings within one mile of the gen-tie corridors throughout their combined 23-mile length. These existing residences are listed in Table PD-7 and shown in Figure PD-7. As indicated in Table PD-7, there are existing dwellings within 1,000 feet of the northern gen-tie corridor, and 10 existing dwellings within 1,000 feet of the southern gen-tie corridor. The principal sources of conflicts or incompatibility that might arise between the gen-tie lines and nearby residences are aesthetics, lighting, and noise. The potential visual and lighting impacts are addressed in detail in Section *3.1. Aesthetics*, and the potential noise impacts are addressed in Section *3.10. Noise*. These discussions are summarized below as they apply to the residential properties that are potentially affected by the WSP gen-tie projects.

Aesthetics

The residences within 1,000 feet of the transmission corridors would have full or partial views of the new transmission lines. The northern gen-tie corridor runs parallel and adjacent to an existing 230-kV transmission line. The incremental visual changes resulting from the addition of the planned transmission lines to similar linear structural elements that exist in the settings of the affected residences, all of which are at least 1,000 feet away, would not substantially degrade the existing visual character or quality of the their settings.

Along the southern gen-tie corridor there are 10 existing dwellings located from 125 to 180 from the gen-tie corridor along Nevada and Jayne Avenues. This gen-tie corridor does not run parallel to an existing transmission line; however, the visual effect of this gen-tie line upon the proximate residences would be reduced by screening from existing landscape trees, the use of monopoles to minimize the tower profiles, and strategic placement of the monopoles away from existing residences. Thus the completion of the southern gen-tie line would not substantially degrade the existing visual character or quality of the settings of the affected residences.

Lighting

The gen-tie projects would produce some light during construction when staging areas would be lighted at night for security, and occasional night work would involve mobile lighting. Construction staging areas would be sited away from existing residences, and temporary mobile lighting would be directed away from nearby residences. Once completed, the gen-tie lines would not include lighting, so no new sources of light would occur. Gen-tie towers and conductors would be constructed of, or coated with, non-reflective materials to avoid reflected glare. Therefore, the WSP gen-tie projects would not result in significant lighting or glare impacts.

Noise

As discussed in Section *3.10. Noise*, the gen-tie projects would generate increased noise during construction. Noise sources would include heavy equipment used for grading and tower assembly, and possible helicopter noise for stringing conductors over features such as the San Luis Canal/California Aqueduct. Given the distances of the nearest residents to the construction areas, the noise levels from conventional construction activity would not exceed maximum permitted noise levels. Helicopter noise is also expected to be below maximum permitted levels. Any noise produced during gen-tie line construction would be brief given the progressive and linear nature of gen-tie line construction.

During operation, the gen-tie lines would emit little noise except for corona discharge which becomes more pronounced during damp or rainy conditions. However, even under these conditions corona noise is audible at the edge of the right-of-way but not far beyond that. At the locations of the nearest affected dwellings, the noise from corona discharge would not be significant.

Since noise levels generated during construction and operation of the gen-tie lines would not be significant at the nearest affected residences, the noise-related land use compatibility impacts associated with construction and operation of the WSP gen-tie projects would be *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. Implement MM AQ-1 (Dust Control) and MM AG-1 (Agricultural Management Plan).**

***WSP Gen-Tie Corridors*. Implement MM AG-4 (Mitigation for Permanent Impacts to Agricultural Operations) and MM AG-5 (Mitigation for Temporary Impacts to Agricultural Operations).**

Impact LU-4. Conflict with a Habitat Conservation Plan or a Natural Communities Conservation Plan

***Westlands Solar Park*. The WSP solar development would not conflict with an adopted habitat conservation plan, a natural community conservation plan, or any other approved local, regional or state habitat conservation plan. (*No Impact*)**

***WSP Gen-Tie Corridors*. The gen-tie projects would not conflict with an adopted habitat conservation plan, a natural community conservation plan, or any other approved local, regional or state habitat conservation plan. (*No Impact*)**

This impact analysis addresses significance criterion 'c' above.

Westlands Solar Park

As discussed in section *3.4. Biological Resources*, the WSP plan area is within the boundaries of PG&E's "San Joaquin Valley Operations and Maintenance Habitat Conservation Plan." Although the HCP mainly covers operational and maintenance activities, it also covers small construction projects such as minor extensions of electrical lines (PG&E 2007). While some elements of the WSP solar projects (e.g., substations) may be constructed and/or operated by PG&E, the HCP would not cover construction of these major facilities; therefore, this HCP does not apply to the Westlands Solar Park.

There are no other HCPs or Natural Community Conservation Plans that cover the project area. However, the USFWS has adopted the *Recovery Plan for Upland Species of the San Joaquin Valley* which covers 34 species of plants and animals that occur in the San Joaquin Valley (USFWS 1998). The majority of these species occur in arid grasslands and scrublands of the San Joaquin Valley and the adjacent foothills and valleys. The only species covered in the Recovery Plan that potentially occurs in the WSP vicinity is the San Joaquin kit fox, although no sightings of this species have been recorded in the immediate vicinity of the WSP plan area. The Recovery Plan does not identify the plan area or any other lands in the vicinity as areas that should be protected as either Specialty Reserve Areas, Wildlife-Compatible Farmland to be Maintained, or Areas Where Connectivity and Linkages Should be Promoted (USFWS 1998). .

The WSP plan area is not covered by any other existing Habitat Conservation Plan (HCP) or Natural Community Conservation Plan (NCCP), or any other conservation plan adopted at the local, regional, state, or federal level. Therefore, WSP solar development would have *no impact* in terms of potential conflict with any such plans.

WSP Gen-Tie Corridors

The only species covered in *Recovery Plan for Upland Species of the San Joaquin Valley*, discussed above, that potentially occurs in the vicinity of the gen-tie corridors is the San Joaquin kit fox. The Recovery Plan also identifies the Kettleman Hills to Anticline Ridge Movement Corridor, located west of I-5 near the western ends of both gen-tie corridors (at the Gates Substation) as a connectivity and linkage area. The gen-tie projects would be located at least 4 miles east of this wildlife corridor and would not hinder its functionality as a movement corridor. Therefore, WSP gen-tie projects would have *no impact* in terms of potential conflict with the Recovery Plan.

The PG&E San Joaquin Valley Operation and Maintenance HCP is the only HCP that covers the area of the gen-tie corridors. While some or all elements of the gen-tie projects may be constructed and/or operated by PG&E, the HCP would not cover construction of these major facilities, but only their maintenance and repair; therefore, this HCP does not apply to the WSP gen-tie corridors.

The WSP gen-tie corridors area is not covered by any other existing Habitat Conservation Plan (HCP) or Natural Community Conservation Plan (NCCP), or any other conservation plan adopted at the local, regional, state, or federal level. Therefore, WSP gen-tie projects would have *no impact* in terms of potential conflict with any such plans.

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

Cumulative Impacts

Impact LU-5. Cumulative Land Use and Planning Impacts

***Westlands Solar Park*. The potential land use impacts associated with the WSP solar development, combined with the land use impacts of other cumulative development, could result in cumulative land use impacts. (*Less-than-Significant Cumulative Impact with Mitigation*)**

***WSP Gen-Tie Corridors*. The potential land use impacts associated with the WSP gen-tie projects, combined with the land use impacts of other cumulative development, could result in cumulative land use impacts. (*Less-than-Significant Cumulative Impact with Mitigation*)**

Geographic Scope of Analysis of Cumulative Land Use Impacts

As discussed in the preceding impact discussions, the potential land use compatibility impacts associated with WSP solar development and the WSP gen-tie projects would be less-than-significant. In general, land use impacts tend to be localized and extend a short distance beyond project boundaries into adjacent lands. Thus the study area for the analysis of cumulative land use impacts is conservatively assumed to extend one mile beyond the WSP boundaries and the WSP gen-tie corridors.

Westlands Solar Park

Near Term

Under near-term conditions, there are 4 pending, approved, and completed projects (or groups of projects) within a one mile radius of the WSP's outside boundaries. (Note: The Westside Solar project and Westlands Aquamarine solar project, shown in Figure PD-9, are located within the WSP plan area. However, since the impacts associated with these projects are addressed in the WSP impact analysis, they are not included again in the list of cumulative projects below.) All 4 of these projects comprise solar PV developments. These solar projects are listed below and described in Section *2.5. Completed, Approved and Pending Projects/ Introduction to Cumulative Impact Analysis*. Their locations are shown in Figure PD-9.

- Mustang/Orion/Kent South
- American Kings
- Mustang 2
- Kettleman

Plan Consistency

In terms of consistency with plans, policies and regulations, the WSP solar development and the other nearby approved and pending projects will be or have been required to conform to the County's General Plan, Development Code, and related standards and requirements. As such, there no plan consistency impacts associated with WSP solar development or any of the cumulative projects, and therefore near term cumulative impact with respect to plan consistency would be *less than significant*.

Compatibility with NAS Lemoore

The northern 3 cumulative projects, and the northern half of the WSP plan area, are located within the Military Influence Area (MIA) of NAS Lemoore and are thus located within the study area of the NASL Joint Land Use Study (JLUS), described in detail under Impact LU-3 above. As with the WSP plan area, portions of those project sites lay within the 70 decibel (dB) noise contour zones associated with NASL flight patterns. However, since solar PV facilities are not noise-sensitive land uses, the development of those project sites for solar generating facilities is not inconsistent with the objectives and recommendations of the JLUS. As with the WSP plan area, none of the other cumulative sites are located within Accident Potential Zones (APZs), and none of the cumulative projects would exceed the 500-foot height obstruction limits established for these lands under the JLUS. As discussed under Impact LU-3 above, the JLUS acknowledges that solar PV panels have a very low potential to create reflected glare and therefore would

not be a hazard to flight operations. In summary, none of the cumulative projects would be incompatible with the operation of NAS Lemoore on an individual project basis. The potential near-term cumulative land use compatibility impacts to NAS Lemoore resulting from the combined development of the cumulative projects, including WSP solar development, would be *less than significant*.

Compatibility with Nearby Agricultural Land Uses

Since all of the cumulative projects consist of solar PV generating facilities, they would raise the same compatibility issues with adjacent agricultural operations as the WSP solar development. The potential for land use conflicts between solar generating facilities and adjacent agricultural operations is discussed in detail in Section *3.2. Agricultural Resources* (under Impact AG-3). To summarize, due to the relatively low intensity of the solar facility operations, the potential for conflicts and incompatibility between these two land uses is generally minimized. However, the construction and grading activities associated with the development of solar facilities would potentially generate windblown dust which would adversely affect neighboring agricultural operations. This potential impact would be mitigated through implementation of Mitigation Measure AQ-1, which requires dust control measures during construction (see Section *3.3. Air Quality and Climate Change*, under Impact AQ-1.) Also, solar facilities could result in the potential introduction of invasive weedy species which would also adversely affect agriculture in the vicinity. This potential impact would be addressed by the weed prevention requirements of Mitigation Measure AG-1 (Agricultural Management Plan), and would be further minimized through implementation of the Weed Abatement Plan required under Article 11, Section 1112.B.2.e of the Kings County Development Code (see Section *3.2. Agricultural Resources*, under Impact AG-1). For the other cumulative solar PV projects, the Conditional Use Permit approvals by Kings County and Fresno County would include similar requirements for dust control and site revegetation which would reduce these potential adjacency impacts to less-than-significant levels for each of the cumulative projects. The residual impacts from each cumulative project, including WSP solar development, would not be cumulatively significant. Therefore, the near-term cumulative land use compatibility impacts to nearby agricultural land uses would be *less than significant with mitigation*.

Compatibility with Nearby Residential Land Uses

As discussed under Impact LU-3 above, the WSP solar development would result in less-than-significant compatibility impacts to the two residential properties near the plan area boundaries – the Shannon Ranch and the Stone Land Company Ranch. Cumulative compatibility impacts would occur only if two or more of the cumulative projects each resulted in some compatibility impacts to a common residential property. The other cumulative projects are all at least 3 miles from the Shannon Ranch and 5 miles from the Stone Land Company Ranch. At these distances, any visual, light, or noise effects generated by the other cumulative projects would not be noticeable at the two ranches. Since no two cumulative projects would produce a noticeable cumulative effect at the nearest common residences, the near-term cumulative land use compatibility impact would be *less than significant*.

In summary, the less-than-significant land use compatibility impacts associated with the development of each of the near-term cumulative projects would not combine to result in a cumulatively significant land use compatibility impact to nearby residential uses. Therefore, the cumulative land use compatibility impacts upon nearby residential properties associated with WSP solar development would be *less than significant*.

Summary

The development of the WSP solar facilities and the other cumulative solar projects would combine to produce less-than-significant impacts in terms of plan consistency, compatibility with NAS Lemoore, and compatibility with nearby residential uses. The potential cumulative impacts arising from potential land use conflicts with nearby agricultural operations would be mitigated with implementation of Mitigation Measures AQ-1 and AG-1. Therefore, the near-term cumulative land use impacts associated with WSP solar development would be *less than significant with mitigation*.

Far Term

For far-term conditions, the cumulative analysis of land use impacts considers the full buildout of land uses within one mile of the WSP plan area, as shown on the 2035 Kings County General Plan. The 'Kings County Land Use Map' of the Land Use Element shows that all lands within one mile of the outside WSP boundaries are designated as either 'General Agriculture 40 ac.' or 'Exclusive Agriculture 40 ac.' These lands are located well outside existing and planned urbanized areas including cities (and their spheres of influence), unincorporated communities (including their planning areas), special districts, rancherias, and military bases. Thus it is reasonable to assume that agricultural production will remain the dominant land use in the adjacent and surrounding lands for the life of the General Plan.

As with the lands within the WSP plan area, the agricultural designations of the 2035 Kings County General Plan on surrounding lands allow the installation of utility-scale PV solar generating facilities (KC 2010a). Thus it is possible that additional solar development projects could be proposed in the WSP vicinity within the 25 year planning horizon of the General Plan. Since the adjacent lands to the west of the WSP site are located within Fresno County, the corresponding General Plan designations for Fresno County lands would guide permitted uses on adjacent lands to the west. Again, all lands within a one mile radius of the WSP plan area to the west are designated 'Agriculture' under the Fresno County General Plan (Fresno County 2000b). While the Fresno County General Plan does not specifically allow PV solar development on agriculturally-designated lands, the County has established a process for considering solar PV development on agriculturally-designated lands, and has approved several solar PV projects under this process (Fresno County 2012c, Fresno County 2016b). Therefore, it is reasonable to assume that Fresno County would consider proposals for PV solar development on agricultural lands within one mile of the WSP plan area. Thus it is anticipated that any non-agricultural development on nearby lands would consist predominantly, if not exclusively, of solar PV projects.

Compatibility with NAS Lemoore

The northern portion of the far-term study area is located within the Military Influence Area (MIA) of NAS Lemoore, and some of these lands are inside the 70 dB noise contour zones associated with NASL flight patterns. However, since solar PV facilities are not noise-sensitive land uses, the development of the affected lands for solar generating facilities would not be inconsistent with the objectives and recommendations of the JLUS. Since the Accident Potential Zones (APZs) associated with NAS Lemoore are located entirely north of SR-198, no portion of the far-term study area would lie within the APZs. The northern portion of the study area lies within height-limited obstruction zones, but future solar PV facilities would not exceed the 500-foot height obstruction limits established for these lands under the JLUS. As discussed under Impact LU-3 above, the JLUS acknowledges that solar PV panels have a very low potential to create reflected glare and therefore future solar PV development within the study area would not pose a hazard to flight operations. In summary, as with the planned solar PV development under the WSP

Master Plan, the potential future solar development of lands with one mile of the WSP plan area would not be incompatible with the operation of NAS Lemoore. Thus, the far-term cumulative land use compatibility impacts resulting from the combined development of the WSP solar facilities and potential solar development of lands within one mile of the WSP plan area and would be *less than significant*.

Compatibility with Nearby Agricultural Land Uses

Since any cumulative non-agricultural projects proposed under far-term conditions would consist of solar PV generating facilities, they would raise the same compatibility issues with adjacent agricultural operations as the WSP solar development. The potential for land use conflicts between solar generating facilities and adjacent agricultural operations is discussed in detail in Section *3.2. Agricultural Resources* (under Impact AG-3). To summarize, due to the relatively low intensity of the solar facility operations, the potential for conflicts and incompatibility between these two land uses is generally minimized. However, the construction and grading activities associated with the development of solar facilities would potentially generate windblown dust which would adversely affect neighboring agricultural operations. This potential impact would be mitigated through implementation of Mitigation Measure AQ-1, which requires dust control measures during construction and decommissioning (see Section *3.3. Air Quality and Climate Change*, under Impact AQ-1.) Also, solar facilities could result in the potential introduction of invasive weedy species which would also adversely affect agriculture in the vicinity. This potential impact would be addressed by the weed prevention requirements of Mitigation Measure AG-1 (Agricultural Management Plan), and would be further minimized through implementation of the Weed Abatement Plan required under Article 11, Section 1112.B.2.e of the Kings County Development Code (see Section *3.2. Agricultural Resources*, under Impact AG-1). At the end of the useful life of each solar facility, the potential impacts with adjacent agricultural operations would be addressed through implementation of Mitigation Measure AG-2 (which requires soil reclamation upon decommissioning), and Mitigation Measure AG-3 (which requires financial assurance for completion of reclamation). For other cumulative solar PV projects, the Conditional Use Permit approvals by Kings County and Fresno County would include similar requirements for dust control and site revegetation, and ultimate site reclamation, which would reduce these potential adjacency impacts to less-than-significant levels for each of the cumulative projects. The residual impacts from each cumulative project, including WSP solar development, would not be cumulatively significant. Therefore, the far-term cumulative land use compatibility impacts to nearby agricultural land uses associated with WSP solar development would be *less than significant with mitigation*.

Compatibility with Nearby Residential Land Uses

As discussed under Impact LU-3 above, the WSP solar development would result in less-than-significant compatibility impacts to the two residential properties near the plan area boundaries – the Shannon Ranch and the Stone Land Company Ranch. Cumulative compatibility impacts would occur only if two or more of the cumulative projects each resulted in compatibility impacts to a common residential property. Under far-term conditions, it is possible but unlikely that currently unknown solar projects would be constructed in proximity to the two nearby ranch complexes. Under such a scenario, solar arrays could be installed as close as 150 feet from the nearest affected dwellings in the ranch complexes. The substantial existing landscaping at both ranch complexes would screen the visual and lighting effects of solar facilities from the nearest ranch dwellings, and construction noise at this distance would brief and less than significant. Therefore, the far-term cumulative land use compatibility impact would be *less than significant*.

In summary, the less-than-significant land use compatibility impacts associated with the development of each of the near-term cumulative projects would not combine to result in a cumulatively significant land use compatibility impact to nearby residential uses. Therefore, the cumulative land use compatibility impacts upon nearby residential properties would be *less than significant*.

Summary

In the far term, the development of the WSP solar facilities and other potential cumulative projects would combine to produce less-than-significant impacts in terms of plan consistency, compatibility with NAS Lemoore, and compatibility with nearby residential uses. The potential cumulative impacts arising from potential land use conflicts with nearby agricultural operations would be mitigated with implementation of Mitigation Measures AQ-1 and AG-1, AG-2, and AG-3. Therefore, the far-term cumulative land use compatibility impacts associated with WSP solar development would be *less than significant with mitigation*.

WSP Gen-Tie Corridors

Near Term

Under near-term conditions, there are three approved and pending solar projects and two transmission projects on lands in the vicinity of the WSP gen-tie corridors. (Note: The Westside Solar project and Westlands Aquamarine solar project, shown in Figure PD-9, are located within the WSP plan area. However, since the impacts associated with these projects are addressed in the WSP impact analysis, they are not included again in the list of cumulative projects below.) These projects are listed below and shown in Figures PD-10, and described in Section *2.5. Completed, Approved, and Pending Projects/Introduction to Cumulative Impact Analysis*.

- Mustang/Orion/Kent South solar projects
- Central Valley Power Connect transmission project (Gates to Gregg Substation)
- Westside Transmission Project (Gates to Dos Amigos/Los Banos Substation)

Plan Consistency

As discussed under LU-2, the WSP gen-tie projects are consistent with the General Plan designations and policies, and zoning regulations of Kings County and Fresno County. Similarly, the other cumulative transmission projects would be likewise consistent with the applicable plans, policies, and regulations of both counties. The cumulative solar projects will be or will have been required to conform to the plans, policies, and regulations of Kings County in order to be approved. As such, there are no plan consistency impacts associated with the WSP gen-tie projects or any of the cumulative projects, and therefore the near-term cumulative impact associated with the WSP gen-tie projects with respect to plan consistency in the near term would be *less than significant*.

Compatibility with Nearby Agricultural Land Uses

Since two of the cumulative projects comprise transmission projects, they would have similar compatibility issues with adjacent agricultural operations as the WSP gen-tie projects. Some disruption of farming activities and damage to crops would potentially occur during construction, and some cropland would be permanently removed from cultivation at the monopole sites. It is expected that the temporary and

permanent impacts of construction and operation of each cumulative transmission project upon agricultural operations would be mitigated through implementation of measures similar to those identified for the WSP gen-tie projects, i.e., MM AG-4 (Mitigation for Permanent Impacts to Agricultural Operations) and MM AG-5 (Mitigation for Temporary Impacts to Agricultural Operations). Thus the impacts of the individual transmission projects upon adjacent agricultural operations would be less than significant in each case.

The impacts associated with the cumulative solar PV projects would be similar to those resulting from WSP solar development. The main issues with solar PV projects would be the generation of windborne dust during construction and the potential to introduce invasive weedy species. As discussed above under Westlands Solar Park, the potential dust impacts would be addressed in each case through implementation of mitigation measures similar to those specified in Mitigation Measure AQ-1 (dust control measures required under SJVAPCD Regulation VIII). With respect to weed control, it is expected that cumulative solar projects would each be subject to mitigation measures similar to those specified in Mitigation Measure AG-1 (Agricultural Management Plan). Thus the impacts of the individual solar projects upon adjacent agricultural operations would be less than significant in each case. The combined effect of any residual impacts from near-term cumulative transmission and solar projects would not combine to result in a cumulatively significant impact. Therefore, the near-term cumulative land use impact to agricultural operations associated with the WSP gen-tie projects would be *less than significant with mitigation*.

Compatibility with Nearby Residential Land Uses

The main sources of land use compatibility impacts are the result of visual, light, or noise effects of projects. A cumulative impact would occur if the combined effects of two or more cumulative projects result in a cumulatively significant impact to a common residential receiver.

The northern WSP gen-tie corridor runs adjacent to alternative transmission corridors under consideration for the Gates to Gregg transmission project (Central Valley Power Connect). The northern gen-tie corridor also runs parallel and adjacent to the existing Henrietta-Gates transmission line. Along this 11.5-mile corridor, there are 10 rural residences located between 0.3 and 0.9 miles from the corridor. Given the presence of the existing transmission line, the addition of two new parallel transmission lines to a setting that includes an existing linear structural element would not result in a significant visual impact to these residences, particularly since that the nearest residence would be over ¼ mile away. The transmission projects would not introduce new sources of light, and the construction noise levels at these distances would be less than significant and temporary. The southern WSP gen-tie corridor is not near other near-term cumulative projects and thus would not contribute to a cumulative impact. In summary, the near-term cumulative compatibility impacts to existing residences associated with the WSP gen-tie corridors would be *less than significant*.

Summary

The WSP gen-tie projects and the other near-term cumulative projects would combine to produce less-than-significant impacts in terms of plan consistency and in terms of compatibility with nearby residential uses, while the potential conflicts with nearby agricultural operations would be reduced to less-than-significant levels through implementation of Mitigation Measures AG-4 and AG-5. Therefore, the near-

term cumulative land use compatibility impacts associated with the WSP gen-tie projects would be *less than significant with mitigation*.

Far Term

Under far-term conditions, it is assumed that all near-term cumulative projects, including the Central Valley Power Connect transmission project, the Westside transmission project, and the solar projects considered in the near-term analysis, will be completed. The far-term cumulative analysis of land use impacts assumes the full buildout of land uses adjacent to the WSP gen-tie corridors as shown on the General Plans of Kings County and Fresno County. Under both county general plans, the adjacent lands are designated for agricultural uses, and solar PV projects are allowed on agriculturally-designated lands. However, it is not foreseeable which lands, if any, adjacent to the gen-tie corridors would be proposed for solar PV development in the far term. Also, additional transmission facilities or other public utility uses could be planned for adjacent lands, but this eventuality is also unforeseeable at this time. However, this far-term analysis assumes that some solar PV development and additional transmission projects would be constructed in the project vicinity in the far term. It is not anticipated that other non-agricultural development would occur in the vicinity of the WSP gen-tie corridors under far-term conditions.

Plan Consistency

As discussed under LU-2, the WSP gen-tie projects are consistent with the General Plan designations and policies, and zoning regulations of Kings County and Fresno County. Similarly, since transmission facilities and solar PV facilities are allowed on the agriculturally-designated and zoned lands in both counties, any future transmission and solar projects would be likewise consistent with the applicable plans, policies, and regulations, subject to any permit conditions the counties would impose. As such, there would be no far-term plan consistency impacts associated with the WSP gen-tie projects or foreseeable cumulative projects, and therefore the far-term cumulatively impact associated with the WSP gen-tie projects with respect to plan consistency would be *less than significant*.

Compatibility with Nearby Agricultural Land Uses

The potential construction of future transmission projects in proximity to agricultural operations would result in some disruption of farming activities during construction, as well as potential damage to crops and infrastructure , and some cropland would be permanently removed from cultivation at the monopole sites. It is expected that the temporary and permanent impacts of construction and operation of any far-term cumulative transmission project upon agricultural operations would be mitigated through implementation of measures similar to those identified above for the WSP gen-tie projects, i.e., MM AG-3 (Mitigation for Permanent Impacts to Agricultural Operations) and MM AG-4 (Mitigation for Temporary Impacts to Agricultural Operations). Thus the impacts of any far-term transmission projects upon adjacent agricultural operations would be less than significant in each case. The combined effect of any residual impacts from near-term cumulative transmission projects would not combine to result in a cumulatively significant impact. Therefore, the far-term cumulative land use impact to agricultural operations associated with the WSP gen-tie projects would be *less than significant with mitigation*.

The impacts associated with any far-term cumulative solar PV projects would include the generation of windborne dust during construction and the potential to introduce invasive weedy species. As discussed above under Westlands Solar Park, the potential dust impacts would be addressed in each case through implementation of mitigation measures similar to those specified in Mitigation Measure AQ-1 (dust control

measures required under SJVAPCD Regulation VIII). With respect to weed control, it is expected that any far-term cumulative solar projects would each be subject to mitigation measures similar to those specified in Mitigation Measure AG-1 (Agricultural Management Plan). At the end of the useful life of each solar facility, the potential impacts with adjacent agricultural operations would be addressed through implementation of Mitigation Measure AG-2 (which requires soil reclamation upon decommissioning), and Mitigation Measure AG-3 (which requires financial assurance for completion of reclamation). Thus, the far-term impacts of the individual solar projects upon adjacent agricultural operations would be *less than significant* in each case. The combined effect of any residual impacts from far-term cumulative transmission and solar projects would not combine to result in a cumulatively significant impact. Therefore, the far-term cumulative land use impact to agricultural operations associated with the WSP gen-tie projects would be *less than significant with mitigation*.

Compatibility with Nearby Residential Land Uses

The main sources of land use compatibility impacts are the result of visual, light, or noise effects of projects. A cumulative impact would occur if the combined effects of two or more cumulative projects result in a cumulatively significant impact to a common residential receiver.

Any transmission projects planned in the far term would be expected to be routed adjacent and parallel to existing transmission lines or transportation corridors. Since these visual settings would already be somewhat degraded by these existing linear structural features, the new transmission lines would not substantially degrade the existing residential settings. Future transmission projects would not introduce new sources of light or glare, and increased noise would occur only during construction and would occur briefly at any given residential location. Thus the far-term land use impacts to existing residences from individual transmission projects would be *less than significant*.

Any solar PV projects planned in the far term would be low in profile and thus would not substantially degrade the visual setting of residences in the vicinity. Solar projects would not produce glare and would introduce new light sources only in a small percentage of the facilities. The solar projects would involve very low intensity activity and would not produce audible noise beyond their boundaries. Thus the far-term land use impacts to existing residences from individual solar projects would be *less than significant*. The combined effect of any residual impacts from far-term cumulative transmission and solar projects would not combine to result in cumulatively significant land use impacts to nearby residences. Therefore, the far-term cumulative land use impact to existing residential land uses associated with the WSP gen-tie projects would be *less than significant*.

Summary

In the far term, the development of the WSP gen-tie projects and other potential cumulative projects would not combine to produce cumulatively significant impacts in terms of plan and policy consistency, or in terms of compatibility with nearby residential uses. The potential cumulative impacts arising from potential land use conflicts with nearby agricultural operations would be mitigated with implementation of Mitigation Measures AQ-1 and AG-1, AG-2, and AG-3. Therefore, the far-term cumulative land use compatibility impacts associated with the WSP gen-tie projects would be *less than significant with mitigation*.

Mitigation Measures:

***Westlands Solar Park*. Implement MMs AQ-1 (Dust Control), AG-1 (Agricultural Management Plan), AG-2 (Soil Reclamation Plan), and AG-3 (Financial Assurance). No additional mitigation is required.**

***WSP Gen-Tie Corridors*. Implement MMs AQ-1 (Dust Control), AG-4 (Mitigation for Permanent Impacts to Agricultural Operations), and AG-5 (Mitigation for Temporary Impacts to Agricultural Operations). No additional mitigation is required.**

REFERENCES/BIBLIOGRAPHY – LAND USE AND PLANNING

CPUC 1995 — California Public Utilities Commission (CPUC). 1995. *General Order No. 131-D. Rules relating to the Planning and Construction of Electric Generation, Transmission/Power/Distribution Line Facilities and Substations Located in California*. Decision 94-06-014, adopted June 8, 1994, as modified August 11, 1995. http://162.15.7.24/PUBLISHED/Graphics/589.PDF

Fresno County 2000a — County of Fresno. 2000. *Fresno County General Plan – Background Report*. Adopted October 2000. http://www.co.fresno.ca.us/viewdocument.aspx?id=5696

Fresno County 2000b — County of Fresno. 2000. *Fresno County General Plan Update EIR*. February. http://www.co.fresno.ca.us/DepartmentPage.aspx?id=68045

Fresno County 2000c — County of Fresno. 2000. *Fresno County 2000 General Plan –Policy Document*. October. http://www2.co.fresno.ca.us/4510/4360/General_Plan/GP_Final_policy_doc/Table_of_Contents_rj_blue.pdf

Fresno County 2011 — County of Fresno. 2011. *Fresno County Zoning Ordinance. The Ordinance Code of the County of Fresno, Part VII. Land Use Regulation and Planning, Division VI-Zoning Division*. Last Date Amended: December 6, 2011. http://www.co.fresno.ca.us/ViewDocument.aspx?id=53760

Fresno County 2012c — County of Fresno. 2012. *Solar Facility Guidelines*. As revised by BOS March 13, 2012. http://www.co.fresno.ca.us/ViewDocument.aspx?id=53400

Fresno County 2017a — County of Fresno. 2017. *Fresno County Code of Ordinances*. As amended through April 20, 2017. https://www.municode.com/library/ca/fresno_county/codes/code_of_ordinances

Fresno County 2017b — County of Fresno. 2017. *Photovoltaic Projects Submitted to Fresno County – 4/24/17 Update*. http://www.co.fresno.ca.us/ViewDocument.aspx?id=57304

Fresno County 2017c — County of Fresno. 2017. *Fresno County GIS – Web Mapping – Zoning*. http://gis.co.fresno.ca.us/zoning/

JLUSPC 2011 — Naval Air Station Lemoore Joint Land Use Study Policy Committee (JLUSPC). 2011. *NAS Lemoore Joint Land Use Study – Final Release*. August 30. http://www.kingscog.org/index.asp?SEC=1E7B4327-327C-4971-85B4-05AF6F18D22A&Type=B_LIST

Kings County 1964 — Kings County. 1964. *Zoning Plan – County of Kings California*. Adopted April 7, 1964. http://www.kingscountygis.com/maps/ Accessed October 6, 2016.

Kings County 2002 — Kings County. 2002. *Kings County Right to Farm Ordinance*. As amended by Ordinance No. 608, effective March 5, 2002. http://www.countyofkings.com/home/showdocument?id=3866

Kings County 2002 — Kings County. 2002. *Kings County Right to Farm Ordinance Form*. Adopted by Ordinance No. 608, effective March 5, 2002. http://www.countyofkings.com/home/showdocument?id=4012

Kings County 2009c — Kings County. 2009. *Draft EIR – 2035 Kings County General Plan Update*. June. http://www.countyofkings.com/home/showdocument?id=5897

Kings County 2010a — County of Kings. 2010. *2035 Kings County General Plan*. Adopted January 26. http://www.countyofkings.com/departments/community-development-agency/information/2035-general-plan

Kings County 2016a — Kings County. 2016. *Kings County Code of Ordinances, as amended through October 4, 2016*. https://www.municode.com/library/ca/kings_county/codes/code_of_ordinances

Kings County 2016b — Kings County. 2016. *Kings County Development Code. Kings County Code of Ordinances, Appendix A - Ordinance No. 668.12*. Dated January 26, 2016; Effective February 26, 2016. http://www.countyofkings.com/home/showdocument?id=12535

PG&E 2007 — Pacific Gas & Electric Co. (PG&E). 2007. *Final PG&E San Joaquin Valley Operations and Maintenance Habitat Conservation Plan* (Updated December 2007). Available at https://www.fws.gov/ecos/ajax/docs/plan_documents/thcp/thcp_838.pdf

USFWS 1998 — U.S. Fish & Wildlife Service (USFWS). 1998. *Recovery Plan for the Upland Species of the San Joaquin Valley, California*. http://esrp.csustan.edu/publications/pubhtml.php?doc=sjvrp&file=cover.html

This page intentionally left blank

3.10. NOISE

The following discussion was prepared with major technical input from Illingworth & Rodkin, Acoustical Consultants. The noise measurement data for this section is attached in a Noise Technical Appendix contained in Appendix E of this EIR.

3.10.1. ENVIRONMENTAL SETTING

INTRODUCTION

Background Information on Acoustics and Noise Measurement

Noise may be defined as unwanted sound. Airborne sound is a rapid fluctuation of air pressure above and below atmospheric pressure. The objectionable effects of noise can be attributed to either pitch or loudness. *Pitch* is the height or depth of a tone or sound, depending on the relative rapidity (frequency) of the vibrations by which it is produced. Higher pitched signals sound louder to humans than sounds with a lower pitch. *Loudness* is intensity of sound waves combined with the reception characteristics of the ear. Intensity may be compared with the height of an ocean wave in that it is a measure of the amplitude of the sound wave.

Sound levels are usually measured and expressed in decibels (dB), a unit of measurement that indicates the relative amplitude of sound pressure. Zero on the decibel scale is based on the lowest sound level that a healthy, unimpaired human ear can detect. Sound levels in decibels are calculated on a logarithmic basis. An increase of 10 decibels represents a ten-fold increase in acoustic energy, while an increase of 20 decibels results from 100 times the energy, and a 30 decibel increase results from an energy increase of 1,000 times. There is a relationship between the subjective noisiness or loudness of a sound and its intensity. Each 10-decibel increase in sound level is perceived as approximately a doubling of loudness. Thus noise at zero decibels is barely audible, while noise at 120 to 140 decibels is painful and may cause hearing damage.

There are several methods of characterizing sound. The most common in California is the *A-weighted sound level or dBA.* This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. Representative outdoor and indoor noise levels in units of dBA are shown in Table NOI-1. Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound or the statistical behavior of the variations must be utilized. Most commonly, environmental sounds are described in terms of an average level that has the same acoustical energy as the summation of all the time-varying events. This energy-equivalent sound/noise descriptor is called L_{eq}. The most common averaging period is hourly, but L_{eq} can describe any series of noise events of arbitrary duration. Similarly, noise levels exceeded during 10 percent of the time are expressed as L_{10}, with noise levels exceeded 50 percent of the time expressed as L_{50}. Maximum noise levels during a given measurement period are expressed as L_{max}, while minimum noise levels are expressed as L_{min}. Additional metrics are described in Table NOI-2.

TABLE NOI-1
TYPICAL NOISE LEVELS IN THE ENVIRONMENT

Common Outdoor Noise Source	Noise Level (dBA)	Common Indoor Noise Source
	120 dBA	
Jet fly-over at 300 meters		Rock concert
	110 dBA	
Impact Pile driver at 20 meters	100 dBA	
		Night club with live music
	90 dBA	
Large truck pass by at 15 meters		
	80 dBA	Noisy restaurant
		Garbage disposal at 1 meter
Gas lawn mower at 30 meters	70 dBA	Vacuum cleaner at 3 meters
Commercial/Urban area daytime		Normal speech at 1 meter
Suburban expressway at 90 meters	60 dBA	
Suburban daytime		Active office environment
	50 dBA	
Urban area nighttime		Quiet office environment
	40 dBA	
Suburban nighttime		
Quiet rural areas	30 dBA	Library
		Quiet bedroom at night
Wilderness area	20 dBA	
	10 dBA	
		Threshold of human hearing
	0 dBA	

Source: Illingworth & Rodkin 2016

TABLE NOI-2
DEFINITIONS OF ACOUSTICAL TERMS

Term	Definitions
Decibel, dB	A unit describing, the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure. The reference pressure for air is 20 micro Pascals.
Sound Pressure Level	Sound pressure is the sound force per unit area, usually expressed in micro Pascals (or 20 micro Newtons per square meter), where 1 Pascal is the pressure resulting from a force of 1 Newton exerted over an area of 1 square meter. The sound pressure level is expressed in decibels as 20 times the logarithm to the base 10 of the ratio between the pressures exerted by the sound to a reference sound pressure (e.g., 20 micro Pascals). Sound pressure level is the quantity that is directly measured by a sound level meter.
Frequency, Hz	The number of complete pressure fluctuations per second above and below atmospheric pressure. Normal human hearing is between 20 Hz and 20,000 Hz. Infrasonic sound are below 20 Hz and Ultrasonic sounds are above 20,000 Hz.
A-Weighted Sound Level, dBA	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.
Equivalent Noise Level, L_{eq}	The average A-weighted noise level during the measurement period.
L_{max}, L_{min}	The maximum and minimum A-weighted noise level during the measurement period.
L_{01}, L_{10}, L_{50}, L_{90}	The A-weighted noise levels that are exceeded 1%, 10%, 50%, and 90% of the time during the measurement period.
Day/Night Noise Level, L_{dn}	The average A-weighted noise level during a 24-hour day, obtained after addition of 10 decibels to levels measured in the night between 10:00 pm and 7:00 am.
Community Noise Equivalent Level, CNEL	The average A-weighted noise level during a 24-hour day, obtained after addition of 5 decibels in the evening from 7:00 pm to 10:00 pm and after addition of 10 decibels to sound levels measured in the night between 10:00 pm and 7:00 am.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive	That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.

Source: Illingworth & Rodkin 2016

Noise measurement equipment includes an electrical filter to reflect the fact that human hearing is less sensitive to low and very high frequencies than sound frequencies in the mid-range. The sound levels measured in this manner produce the A-weighted sound levels that are typically expressed as dBA. Unless otherwise noted, all noise levels indicated in this section are A-weighted, although the metric may be abbreviated to dB for simplicity.)

Since the sensitivity to noise increases during the evening and at night (because excessive noise interferes with the ability to sleep), 24-hour descriptors have been developed that incorporate artificial noise penalties added to quiet-time noise events. The *Community Noise Equivalent Level (CNEL)* is a measure of the cumulative noise exposure in a community, with a 5 dB penalty added to evening (7:00 PM to 10:00 PM) noise levels and a 10 dB penalty added to nighttime (10:00 PM to 7:00 AM) noise levels. The *Day/Night Average Sound Level (L_{dn})* is essentially the same as CNEL, with the exception that the evening time period is dropped and all occurrences during this three-hour period are grouped into the daytime period (I&R 2014b).

Vibration

Vibration is an oscillatory motion through a solid medium, in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. 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 decibel notation acts to compress the range of numbers required to describe vibration. Typically, groundborne vibration generated by heavy equipment or traffic on rough roads attenuates rapidly with distance from the source of the vibration so that potential impact areas are usually confined within short distances (e.g., 200 feet or less) from the source (USDOT 2006).

Existing Noise Environment

Westlands Solar Park

The primary noise sources in the vicinity of the WSP plan area are: 1) traffic on Avenal Cutoff Road, Lincoln/Gale Avenue, Laurel Avenue, 25th Avenue, and Nevada Avenue; 2) agricultural machinery and crop dusters; and 3) the occasional overflights by military aircraft from Naval Air Station Lemoore.

The nearest noise-sensitive receptors in the immediate vicinity of the WSP plan area are located at two ranch complexes situated across county roads from the plan area. These include: 20 single-family dwellings at the Shannon Ranch complex, opposite the west plan area boundary at Avenal Cutoff Road and Lincoln/Gale Avenue; and 2 single-family dwellings at the Stone Land Company Ranch on the south side of Nevada Avenue, approximately 1.5 mile east of Avenal Cutoff Road. Currently, the primary noise sources at both of these ranch complexes include vehicular traffic on Avenal Cutoff Road and Nevada Avenue, respectively, and operational noise from farming and related activities. Both ranches include airstrips which are used infrequently and generate occasional noise from takeoffs and landings by small aircraft.

The Lemoore Naval Air Station is located approximately 5 miles north of the Shannon Ranch and 8 miles north of the Stone Land Company Ranch. While some flight paths for NAS Lemoore pass over the WSP

plan area, no flight paths pass directly over either the Shannon Ranch or the Stone Land Company Ranch. Both ranch complexes are outside the 60 dBA CNEL noise contour for flight paths as mapped in the NAS Lemoore Joint Land Use Study (JLUSPC 2011). It is estimated that both ranch complexes are located on or near the 55 dBA CNEL noise contour from military overflights from NAS Lemoore.

A noise monitoring survey was conducted by Illingworth & Rodkin on December 14 and 15, 2015 to quantify the existing ambient noise environment at the WSP plan area. Three long-term (24-hour) noise measurements and 5 short-term noise measurements were made to complete the noise monitoring survey. Noise measurement locations are shown on Figure NOI-1. The noise monitoring sites were selected to represent the existing noise-sensitive land uses in the immediate vicinity of the project site and to quantify the predominant sources of noise (e.g., traffic along local roadways, agricultural operations, and military overflights).

Long-term noise measurement location LT-1 was located 40 feet from the centerline of West Jayne Avenue (across from 15015 West Jayne Avenue), approximately 3.5 miles west of Avenal Cutoff Road. During the daytime hours of 7 AM to 10 PM, maximum noise levels at this location ranged from 78 to 89 dBA L_{max} (arithmetic mean – 84 dBA L_{max}), and hourly average noise levels ranged from 65 to 74 dBA L_{eq} (arithmetic mean – 70 dBA L_{eq}). Between nighttime hours of 10 PM and 7 AM, maximum noise levels ranged from 40 to 87 dBA L_{max}, and hourly average noise levels ranged from 58 to 74 dBA L_{eq}. The day-night average noise level was calculated to be 75 dBA L_{dn} at this location (CNEL was also 75 dBA), with the higher daily average values reflecting penalties added for evening and nighttime noise.

Long-term noise measurement site LT-2 was located north of the Stone Land Company Ranch complex on Nevada Avenue, approximately 1.4 miles east of Avenal Cutoff Road, and 27 feet from the centerline of Nevada Avenue. During the daytime hours of 7 AM to 10 PM, maximum noise levels at this location ranged from 53 to 92 dBA L_{max} (arithmetic mean 80 dBA L_{max}), and hourly average noise levels ranged from 57 to 69 dBA L_{eq} (arithmetic mean – 63 dBA L_{eq}). Between nighttime hours of 10 PM and 7 AM, maximum noise levels ranged from 33 to 90 dBA L_{max}, and hourly average noise levels ranged from 53 to 66 dBA L_{eq}. The day-night average noise level was calculated to be 67 dBA L_{dn} at this location (CNEL was also 67 dBA).

Long-term noise measurement site LT-3 was located opposite the east frontage of the Shannon Ranch complex on Avenal Cutoff Road, approximately 560 feet south of Lincoln/Gale Avenue, and 81 feet from the centerline of Avenal Cutoff Road. During the daytime hours of 7 AM to 10 PM, maximum noise levels at this location ranged from 75 to 92 dBA L_{max} (arithmetic mean – 81 dBA L_{max}), and hourly average noise levels ranged from 62 to 72 dBA L_{eq} (arithmetic mean – 69 dBA L_{eq}). Between nighttime hours of 10 PM and 7 AM, maximum noise levels ranged from 57 to 100 dBA L_{max}, and hourly average noise levels ranged from 57 to 73 dBA L_{eq}. The day-night average noise level was calculated to be 75 dBA L_{dn} at this location (CNEL was also 75 dBA).

Five short-term noise measurements were made outside the WSP plan area, at the locations of existing clusters of residences that would be subject to increased traffic noise from construction delivery truck traffic associated with solar development within the WSP.

Short-term noise measurement site ST-1 was located on the north side of West Jayne Avenue, approximately 3.5 miles west of Avenal Cutoff Road, where there is a group of 8 single-family dwellings located approximately 100 feet from the roadway centerline. The measured maximum noise level at a distance of 75 feet from the roadway centerline was 59 dBA L_{max}, and the measured 10-minute average noise level at this location was 51 dBA $L_{eq.}$

Short-term noise measurement location ST-2 was on the north side of Nevada Avenue, south of the central portion of the WSP plan area, near the Stone Land Company Ranch complex located approximately 150 feet from the roadway centerline. The measured maximum noise level at a distance of 75 feet from the roadway centerline was 77 dBA L_{max}, and the measured 10-minute average noise level at this location was 65 dBA $L_{eq.}$

Short-term noise measurement location ST-3 was on the north side of West Gale Avenue, approximately 4.5 miles west of Avenal Cutoff Road, where there is a group of 4 single-family dwellings located approximately 150 feet from the roadway centerline. The measured maximum noise level at a distance of 75 feet from the roadway centerline was 80 dBA L_{max}, and the measured 10-minute average noise level at this location was 61 dBA $L_{eq.}$

Short-term noise measurement site ST-4 was located in the center of the Shannon Ranch complex, approximately 430 feet from the centerline of West Gale Avenue and 370 feet from Avenal Cutoff Road. The measured maximum noise level was 63 dBA L_{max}, and the measured 10-minute average noise level at this location was 53.2 dBA $L_{eq.}$

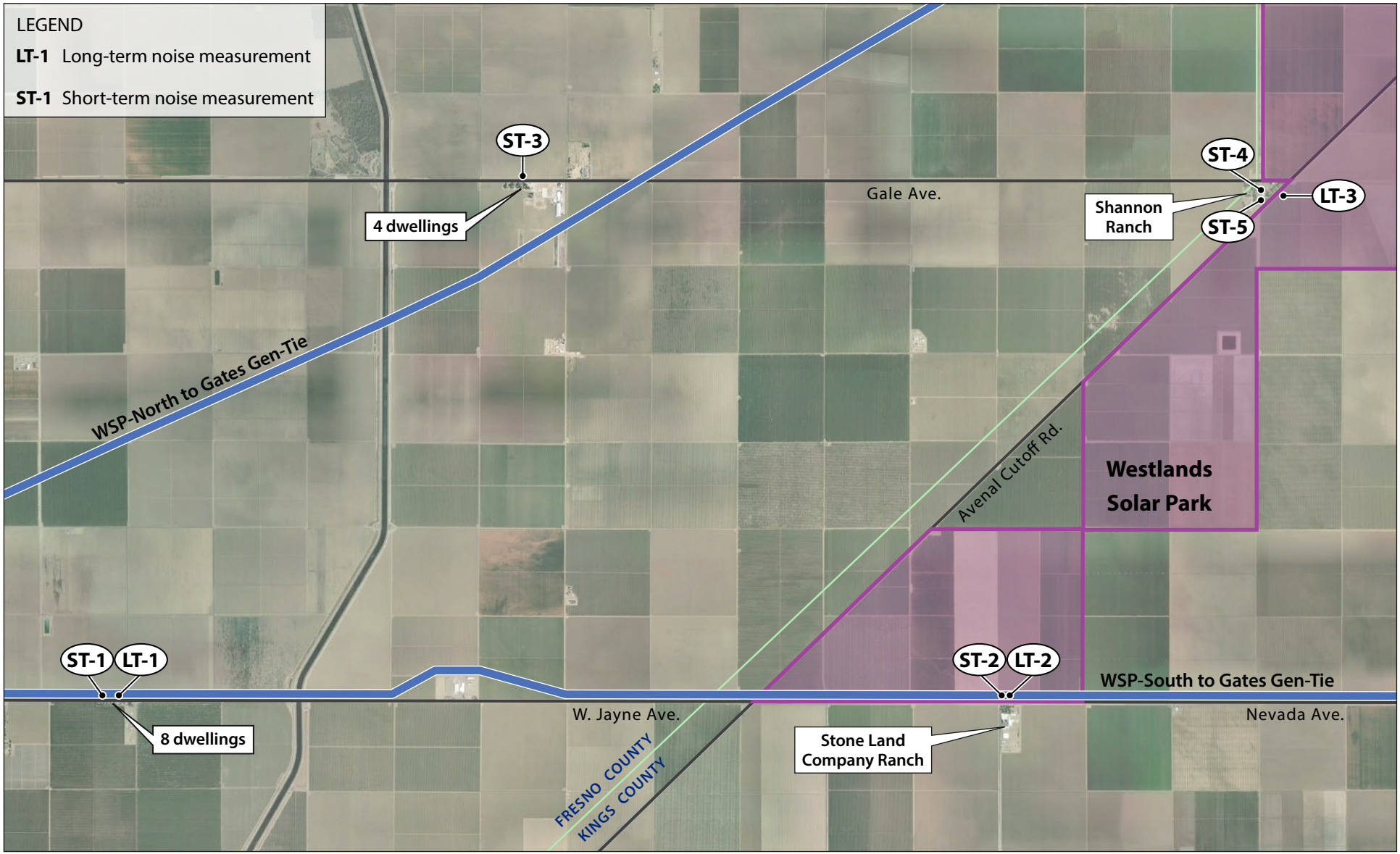
Short-term noise measurement location ST-5 was on the north side of the Avenal Cutoff Road approximately 81 feet from the roadway centerline along the south edge of the Shannon Ranch complex. The measured maximum noise level at ST-5 was 81 dBA L_{max}, and the measured 10-minute average noise level at this location was 69 dBA $L_{eq.}$

WSP Gen-Tie Corridors

WSP-North to Gates Gen-Tie

This planned gen-tie corridor would run parallel to the existing 230 kV Henrietta-Gates transmission line, commencing in the northern portion of the WSP plan area and extending southwestward for approximately 11.5 miles to the Gates Substation on Jayne Avenue. This corridor would pass through sparsely settled agricultural land, crossing over Gale Avenue and SR-269 en route to the Gates Substation.

Ambient noise levels along the transmission corridor would be typical of the rural setting. The predominant noise sources would consist of agricultural machinery, military aircraft from NAS Lemoore, traffic on Gale and Jayne Avenues, and SR-269, and low-level corona discharge noise from the existing transmission lines. The dominant noise source is from traffic along area roadways, so ambient noise levels along the transmission corridor vary depending on proximity to county roads and state highways. In rural settings, noise levels at locations away from paved roadways would typically be less than 50 dBA L_{dn}. Along the paved roadways that would be crossed by the transmission corridor, ambient noise levels at 100 feet from the road centerlines are follows: 1) Gale Avenue – 61 dBA L_{dn}; 2) Jayne Avenue – 65 dBA L_{dn}; 3) SR-269 – 69 dBA L_{dn}.



Source: Illingworth & Rodkin, 2016

N

0 1 mile

Noise Measurement Locations

Figure NOI-1

This page intentionally left blank

There are 3 sensitive residential receptor locations within one mile of the planned transmission corridor. The nearest is a group of 4 dwellings located on Gale Avenue approximately 1,600 feet north of the transmission corridor. The other two receptors consist of single dwellings located 2,000 feet and 3,000 feet from the transmission corridor. The City of Huron is located 2.7 miles northwest of the transmission corridor at its nearest point.

WSP-South to Gates Gen-Tie

This planned gen-tie corridor would run along the north side of Nevada/Jane Avenue, proceeding from the central area of WSP and extending westward for approximately 11.5 miles to the Gates Substation on Jayne Avenue. This corridor would pass through sparsely settled agricultural land, crossing Avenal Cutoff Road, the San Luis Canal/California Aqueduct, and SR-269 en route to the Gates Substation.

Ambient noise levels along the transmission corridor would be typical of the rural setting. The dominant noise source is from traffic along Nevada/Jayne Avenue, where ambient noise levels would be 59 to 66 dBA L_{dn} at 100 feet from the roadway centerline.

There are 2 groups of sensitive residential receptors along Nevada/Jayne Avenue in proximity to the planned gen-tie corridor. These include: 2 dwellings at the Stone Land Ranch Company located on the south side of Nevada Avenue, 1.4 miles east of Avenal Cutoff Road, located approximately 165 feet from the gen-tie corridor, and; a group of 8 small dwellings located on the south side of Jayne Avenue, between the California Aqueduct and SR-269, approximately 3.5 miles west of Avenal Cutoff Road, situated approximately 130 feet from the gen-tie corridor.

3.10.2. REGULATORY SETTING

Kings County

Kings County General Plan

The 2035 Kings County General Plan contains the following goals, objectives and policies related to noise that are relevant to the Westlands Solar Park:

Noise Element

B. Non-Transportation Noise Protection

N GOAL B1 Protect the economic base of Kings County by preventing the encroachment of noise-sensitive land uses into areas affected by existing noise-producing uses. More specifically, to recognize that noise is an inherent byproduct of many land uses, including agriculture, and to prevent new noise-sensitive land uses from being developed in areas affected by existing noise-producing uses.

N OBJECTIVE B1.1 Reduce the potential for exposure of County residents and noise-sensitive land uses to excessive noise generated from Non-Transportation Noise Sources.

N Policy B1.1.1: Appropriate noise mitigation measures shall be included in a proposed project design when the proposed new use(s) will be affected by or include non-transportation noise sources and exceed the County's "Non-Transportation Noise Standards" (Table N-8)(next page). Mitigation measures shall reduce projected noise levels to a state of compliance with this standard within sensitive areas. These standards are applied at the sensitive areas of the receiving use.

Table N-8 Non-Transportation Noise Standards
Average (Leq) / Maximum (Lmax)[1]

Receiving Land Use	Outdoor Area[2] Daytime	Outdoor Area[2] Nighttime	Interior[3] Day & Night	Notes
All Residential	55 / 75	50 / 70	35 / 55	
Transient Lodging	55 / 75	---	35 / 55	4
Hospitals & Nursing Homes	55 / 75	---	35 / 55	5, 6
Theaters & Auditoriums	---	---	30 / 50	6
Churches, Meeting Halls, Schools, Libraries, etc.	55 / 75	---	35 / 60	6
Office Buildings	60 / 75	---	45 / 65	6
Commercial Buildings	55 / 75	---	45 / 65	6
Playgrounds, Parks, etc.	65 / 75	---	---	6
Industry	60 / 80	---	50 / 70	6

Notes:
1. The Table N-8 standards shall be reduced by 5 dB for sounds consisting primarily of speech or music, and for recurring impulsive sounds. If the existing ambient noise level exceeds the standards of Table N-8, then the noise level standards shall be increased at 5 dB increments to encompass the ambient.
2. Sensitive areas are defined acoustic terminology section.
3. Interior noise level standards are applied within noise-sensitive areas of the various land uses, with windows and doors in the closed positions.
4. Outdoor activity areas of transient lodging facilities are not commonly used during nighttime hours.
5. Hospitals are often noise-generating uses. The exterior noise level standards for hospitals are applicable only at clearly identified areas designated for outdoor relaxation by either hospital staff or patients.
6. The outdoor activity areas of these uses (if any), are not typically utilized during nighttime hours.

N Policy B1.1.3: Noise associated with construction activities shall be considered temporary, but will still be required to adhere to applicable County *Noise Element* standards.

C. Excessive Noise Prevention

N GOAL C1 Provide sufficient noise exposure information so that existing and potential noise impacts may be effectively addressed in the land use planning and project

review processes, and allow flexibility in the development of infill properties which may be located in elevated noise environments.

N OBJECTIVE C1.1 Ensure the sufficient provision of project and site noise information is available along with alternative mitigation approaches to better inform County staff and land use decision makers.

N Policy C1.1.1: All noise analyses prepared to determine compliance with the noise level standards contained within this *Noise Element* shall be prepared in accordance with the County's "Requirements for Acoustical Analyses Prepared in Kings County" (Table N-9).

Table N-9 Requirements for Acoustical Analyses Prepared in Kings County

An acoustical analysis prepared pursuant to the *Noise Element* shall:

A. Be the responsibility of the applicant.

B. Be prepared by qualified persons experienced in the fields of environmental noise assessment and architectural acoustics.

C. Include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions.

D. Estimate projected future (20 year) noise levels in terms of the Standards of Tables N-7 and N-8, and compare those levels to the adopted policies of the *Noise Element*.

E. Recommend appropriate mitigation to achieve compliance with the adopted policies and standards of the *Noise Element*.

F. Estimate interior and exterior noise exposure after the prescribed mitigation measures have been implemented.

N Policy C1.1.2: Where noise mitigation measures are required to satisfy the noise level standards of this *Noise Element*, emphasis shall be placed on the use of setbacks and site design, prior to consideration of the use of noise barriers.

Kings County Code of Ordinances

Noise Abatement

Article 10 of the Code of Ordinances sets forth requirements and procedures for noise abatement in the County. Section 15-211 (Certain Noise Prohibited) provides as follows:

"No person shall make, suffer, or permit upon any premises owned, occupied or controlled by such person any noises or sounds which are physically annoying to the senses of persons of ordinary sensitivity, or which are so harsh or so prolonged or unnatural or unusual in their use, time or place, as to cause physical discomfort to neighbors or to interfere with the comfortable

use and enjoyment of life or property, or which constitutes a public or private nuisance, within any unincorporated territory of the County of Kings.

The Code of Ordinances provides no further detail on acceptable noise levels or limits on hours for operational or construction noise sources. As such, the General Plan Noise Element requirements and standards (reproduced above) are controlling with respect to quantitative noise thresholds.

Fresno County

Fresno County 2000 General Plan

The Fresno County 2000 General Plan contains the following goals and policies related to noise that are relevant to the WSP Gen-Tie Corridors:

Health and Safety Element

Goal HS-G To protect residential and other noise-sensitive uses from exposure to harmful or annoying noise levels; to identify maximum noise levels compatible with various land use designations; and to develop a policy framework necessary to achieve and maintain a healthful noise environment.

Policy HS-G.1 Minimize Noise Impacts**.** The County shall require that all proposed development incorporate design elements necessary to minimize adverse noise impacts on surrounding uses.

Policy HS-G.4 Acoustical Analysis for New Projects**.** So that noise mitigation may be considered in the design of new projects, the County shall require an acoustical analysis as part of the environmental review process where:

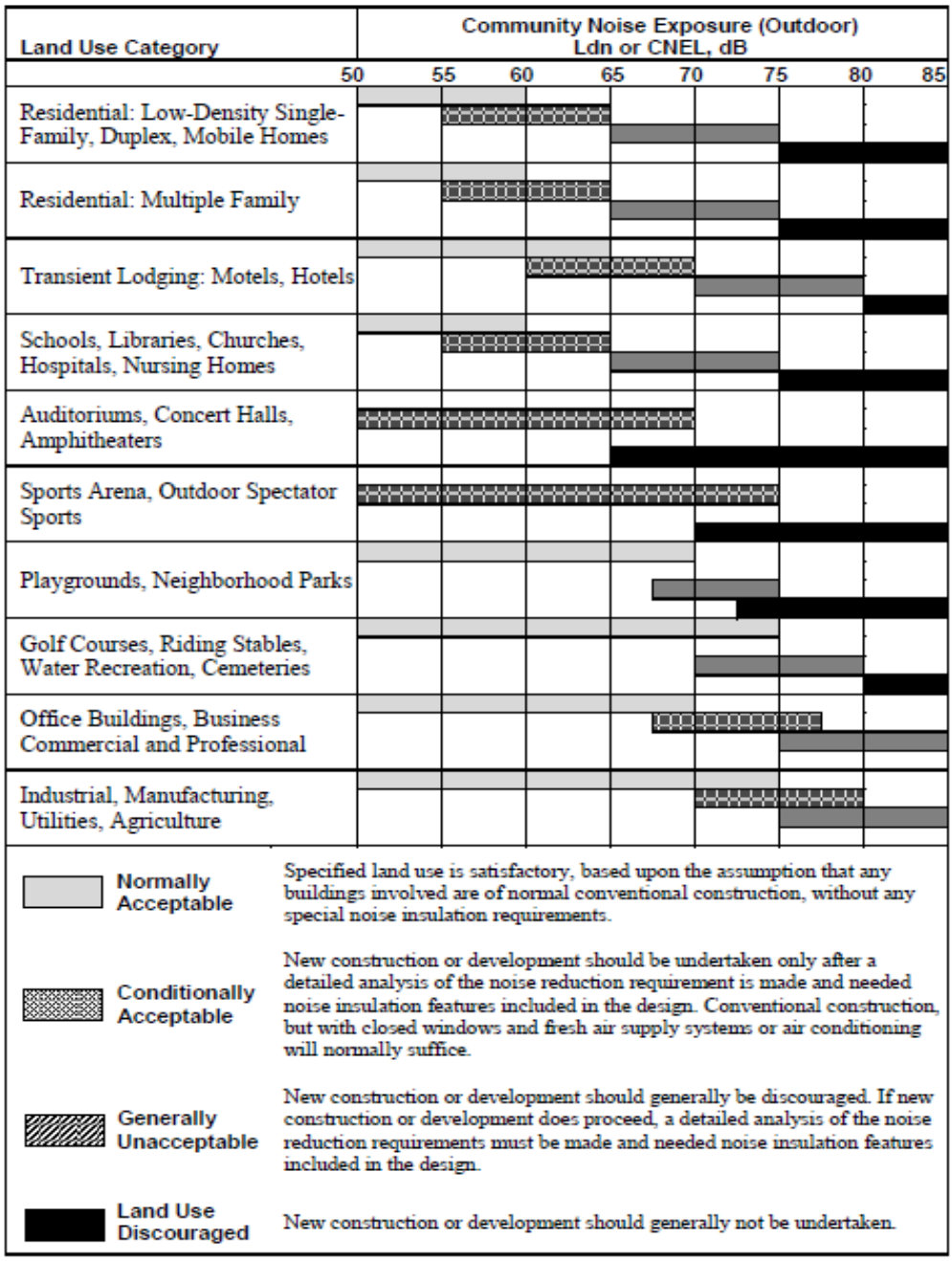
a. Noise sensitive land uses are proposed in areas exposed to existing or projected noise levels that are "generally unacceptable" or higher according to Chart HS-1: "Land Use Compatibility for Community Noise Environments;" (next page)
b. Proposed projects are likely to produce noise levels exceeding the levels shown in the County's Noise Control Ordinance at existing or planned noise-sensitive land uses.

Policy HS-G.5 Noise Mitigation for New Projects**.** Where noise mitigation measures are required to achieve acceptable levels according to land use compatibility or the Noise Control Ordinance, the County shall place emphasis of such measures upon site planning and project design. These measures may include, but are not limited to, building orientation, setbacks, earthen berms, and building construction practices. The County shall consider the use of noise barriers, such as soundwalls, as a means of achieving the noise standards after other design-related noise mitigation measures have be evaluated or integrated into the project.

Policy HS-G.6 Construction-related Noise. The County shall regulate construction-related noise to reduce impacts on adjacent uses in accordance with the County's Noise Control Ordinance.

Policy HS-G.8 Noise Compatibility Standards. The County shall evaluate the compatibility of proposed projects with existing and future noise levels through a comparison to Chart HS-1, "Land use Compatibility for Community Noise Environments."

Chart HS-1 – Land Use Compatibility for Community Noise Environments



Fresno County Ordinance Code

Noise Control

Chapter 8.40 of the Ordinance Code sets forth requirements and procedures for noise abatement in the County. The following sections apply to transmission lines:

Section 8.40.040 – Exterior Noise Standards

A. It is unlawful for any person, including an owner, whether through the owner or the owner's agent, lessee, sublessor, sublessee or occupant, at any location within the unincorporated area of the county, to create any noise, or to allow the creation of any noise, on property owned, leased, occupied or otherwise controlled by such person which causes the exterior noise level when measured at any affected single- or multiple-family residence, school, hospital, church or public library situation in either the incorporated or unincorporated area to exceed the noise level standards as set forth in the following table:

Category	Cumulative Number of Minutes in any one-hour time period	Noise Level Standards, dBA	
		Daytime 7a.m. to 10 p.m.	Nighttime 10 p.m. to 7 a.m.
1	30	50	45
2	15	55	50
3	5	60	55
4	1	65	60
5	0	70	65

Section 8.40.060 - Noise Source Exemptions. The following activities shall be exempted from the provisions of this chapter:

C. Noise sources associated with construction, provided such activities do not take place before six a.m. or after nine p.m. on any day except Saturday or Sunday, or before seven a.m. or after five p.m. on Saturday or Sunday.

G. Noise sources associated with work performed by private or public utilities in the maintenance or modification of its facilities.

3.10.3. Environmental Impact Analysis

Significance Criteria

Based on the State CEQA Guidelines, Appendix G, the project would be considered to have a significant noise impact if it would:

a. Expose people to or generate noise levels in excess of standards established in the local general plan, noise ordinance, or applicable standards of other agencies. (Impacts NOI-1, NOI-2, NOI-3, NOI-5, NOI-6, NOI-7, NOI-8, and NOI-9)

b. Expose people to or generate excessive groundborne vibration or groundborne noise levels. (Impact NOI-5)

c. Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project. (Impacts NOI-5, NOI-6, NOI-7, and NOI-8)

d. Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project. (Impacts NOI-1, , NOI-2, NOI-3, NOI-4, and NOI-10)

e. For projects within an area covered by an airport land use plan or within two miles of a public airport or public use airport when such an airport land use plan has not been adopted, or within the vicinity of a private airstrip, expose people residing or working in the project area to excessive aircraft noise levels. (Impact NOI-10)

f. For a project within the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels. (Impact NOI-10)

CEQA does not define the noise level increase that is considered substantial. However, the General Plans of Kings and Fresno Counties all apply the same noise increment thresholds for noise generated by new transportation projects, as follows:

Pre-Project Noise Environment (L_{dn})	Significant Increase
Less than 60 dBA	5+ dBA
60 – 65 dBA	3+ dBA
Greater than 65 dBA	1.5+ dBA

The above noise increment thresholds are intended by the respective counties to apply to noise generated by new transportation projects, which does not encompass increased traffic volumes on existing roadways that are not proposed for capacity enhancing projects. However, for purposes of this analysis, and in the absence of adopted noise thresholds for traffic volume increases, the above noise increment thresholds are applied as significance criteria for increased transportation noise on existing roadways. It is noted that in Fresno County these noise increment thresholds would only apply to permanent transportation noise sources since construction noise sources, including construction traffic, are exempt from these counties' noise standards. In Kings County, these thresholds would apply to both temporary and permanent transportation noise sources, since construction activity is not exempt from the Kings County noise standards.

IMPACTS AND MITIGATION

Construction Noise

Impact NOI-1. Noise from Conventional Construction Activities

Westlands Solar Park*. Noise levels would be temporarily elevated during construction activities associated with WSP solar development.** ***(Less-than-Significant Impact)

WSP Gen-Tie Corridors*. Noise levels would be temporarily elevated during construction activities associated with the WSP gen-tie projects. *(Less-than-Significant Impact)

This impact analysis addresses significance criteria 'a' and 'd' above.

Westlands Solar Park

Construction activities associated with WSP solar development would take place over a period of approximately 15 years. The activities would include: site clearing and grading; installation of solar arrays and electrical infrastructure; construction of Operations and Maintenance facilities; installation of on-site transmission lines; and construction of on-site substations. It is expected that solar generating facilities (SGFs) within the WSP plan area would be constructed sequentially, although a worst-case scenario would involve the concurrent construction of two 250-MW SGFs on adjacent sites within WSP.

As discussed in Section *3.10.2. Regulatory Context* above, the Kings County Code of Ordinances does not contain specific noise level limits for construction noise. The Kings County General Plan Noise Element does contain noise standards, and states in Policy B.1.1.3 that temporary construction activity is required to adhere to those noise standards. The applicable standards, set forth in Table N-8 of the Noise Element (reproduced in Section *3.10.2. Regulatory Context* above), establish exterior daytime noise limits for residential uses of 75 L_{max} and 55 L_{eq} (i.e., L_{max} = maximum instantaneous noise; L_{eq} = average noise during the noisiest hour). Table N-8, footnote 1 states that "[i]f the existing ambient noise level exceeds the standards of Table N-8, then the noise level standards shall be increased at 5 dB increments to encompass the ambient." As shown in Table NOI-3 (next page), there are several locations where the ambient noise levels at the residential receptor locations exceed the applicable Noise Element standard, which results in an incremental adjustment in the standard to encompass the ambient. (The locations of the affected dwellings are shown in Figure NOI-1.) The adjusted noise standards shown in Table NOI-3 represent the significance thresholds for determining whether residential receptors located near WSP construction areas would be subject to significant noise impacts.

The determination of whether construction activity would result in a significant noise impact depends on several factors, including: the noise levels generated by various pieces of construction equipment; the number of pieces of equipment in operation in a given area; the timing and duration of noise generating activities; and the distance between construction noise sources and noise sensitive receivers. Typical noise levels from construction equipment are shown in Table NOI-4 on the next page.

Installation of Solar Arrays

Noise generated by construction would be the greatest during site grading, excavation for underground cables, and installation of support posts for solar arrays. The equipment that would typically be used during grading and site preparation includes dozers, graders, compactors, and trucks, which produce maximum noise levels ranging from 80 to 85 dBA at 50 feet (see Table NOI-4). The typical average hourly noise levels from all construction equipment during grading and construction would range from 65 to 85 dBA L_{eq} at a distance of 50 feet from active construction areas.

As mentioned, pile drivers would be used to install support posts for the solar arrays. Due to the wide range of equipment types that are available for post driving, and because of the high noise levels associated with conventional impact pile drivers, a focused discussion on pile drivers is warranted here.

TABLE NOI-3

CONSTRUCTION NOISE THRESHOLDS FOR RESIDENTIAL RECEPTOR LOCATIONS

Residential Receptor Location	Hourly Average Noise (dBA L_{eq})				Maximum Noise (dBA L_{max})			
	Noise Element Standard	Ambient Noise	Adjust-ment	Adjusted Noise Standard	Noise Element Standard	Ambient Noise	Adjust-ment	Adjusted Noise Standard
Shannon Ranch w/s Avenal Cutoff Road	55	68	+15	**70**	75	79	+5	**80**
Shannon Ranch s/s Lincoln Ave/ Gale Ave	55	67	+15	**70**	75	77	+5	**80**
Shannon Ranch south end of 28th Ave, w/s Avenal Cutoff Road	55	66	+15	**70**	75	76	+5	**80**
Stone Land Co. s/s Nevada Ave, east of Avenal Cutoff Road	55	57	+5	**60**	75	76	+5	**80**

Notes:
1) Adjusted noise standards are shown in **bold**.
2) See Figure NOI-1 for locations of residential receptors.
Source: Illingworth & Rodkin

It is anticipated that support posts for the solar arrays would be installed using vibratory (hydraulic) post drivers, which do not produce the loud impulsive sounds associated with impact pile drivers, which produce noise levels of up to 105 dBA at 50 feet. Overall noise levels from vibratory drivers are substantially lower than those generated by impact pile drivers. Depending on the model and make of the hydraulic driver, and the size of the piles to be driven, measured noise levels from a single vibratory driver range from 72 to 95 dBA at a distance of 50 feet.[1]

The range in noise levels reflects the range in equipment size which varies from heavy-duty pile drivers for building piles and marine piers, to light-duty pile drivers for driving smaller posts. The support piles for the solar arrays would be relatively small diameter (4-inch) steel poles or H-beams, which would be installed by lighter-duty truck- or tractor-mounted vibratory drivers. The type of vibratory pile drivers most likely to be utilized would generate noise levels of 72 dBA at 50 feet (SLO County 2010, App. 14). Given that the solar arrays to be installed within WSP would be very similar to those at the Topaz Solar Farm, the noise data from the Topaz EIR is applicable to the analysis of noise impacts from pile drivers that would be utilized within the WSP plan area. To present a worst-case scenario for purposes of analysis, it is assumed that up to 5 pile drivers may be utilized to install support posts in the same vicinity. It is estimated that the combined noise level generated by such pile drivers operating in the same vicinity would be up to 79 dBA L_{max} at 50 feet. The hourly average noise generated by the 5 vibratory drivers operating simultaneously in the same area would be about 72 dBA L_{eq}.

[1] FirstSolar's Topaz EIR (SLO County 2010) p. B-38 states that "During post driving tests on another First Solar construction site in August 2009, noise meter readings were approximately 103 dB at about 7 feet from the post driver and 66 dB at about 100 feet from the post driver. Topaz Appendix 14, Attachment 1, indicates Truck Mounted Post Driver (66 dB at 100 feet), 72 dBA at 50 feet, and 69.8 dBA Leq at 50 feet.

TABLE NOI-4

CONSTRUCTION EQUIPMENT – NOISE EMISSION LEVELS (AT 50 FEET)

Equipment Category	L_{max} Level (dBA)[1,2]	Impact or Continuous
Arc Welder	73	Continuous
Auger Drill Rig	85	Continuous
Backhoe	80	Continuous
Bar Bender	80	Continuous
Boring Jack Power Unit	80	Continuous
Chain Saw	85	Continuous
Compressor[3]	70	Continuous
Compressor (other)	80	Continuous
Concrete Mixer	85	Continuous
Concrete Pump	82	Continuous
Concrete Saw	90	Continuous
Concrete Vibrator	80	Continuous
Crane	85	Continuous
Dozer	85	Continuous
Excavator	85	Continuous
Front End Loader	80	Continuous
Generator	82	Continuous
Generator (25 KVA or less)	70	Continuous
Gradall	85	Continuous
Grader	85	Continuous
Grinder Saw	85	Continuous
Horizontal Boring Hydro Jack	80	Continuous
Hydra Break Ram	90	Impact
Impact Pile Driver	105	Impact
Insitu Soil Sampling Rig	84	Continuous
Jackhammer	85	Impact
Mounted Impact Hammer (hoe ram)	90	Impact
Paver	85	Continuous
Pneumatic Tools	85	Continuous
Pumps	77	Continuous
Rock Drill	85	Continuous
Scraper	85	Continuous
Slurry Trenching Machine	82	Continuous
Soil Mix Drill Rig	80	Continuous
Street Sweeper	80	Continuous
Tractor	84	Continuous
Truck (dump, delivery)	84	Continuous
Vacuum Excavator Truck (vac-truck)	85	Continuous
Vibratory Compactor	80	Continuous
Vibratory Pile Driver	72 - 95	Continuous
All other equipment with engines larger than 5 HP	85	Continuous

Footnotes
[1] Measured at 50 feet from the construction equipment, with a "slow" (1 sec.) time constant.
[2] Noise limits apply to total noise emitted from equipment and associated components operating at full power while engaged in its intended operations.
[3] Portable Air Compressor rated at 75 cfm or greater and operates at greater than 50 psi.
Source: Illingworth & Rodkin

Since the noise levels generated by the multiple vibratory drivers (e.g., 79 dBA L_{max}) would be lower than the noise generated by multiple pieces of equipment operating simultaneously during site preparation and grading (e.g., 85 dBA L_{max}), the worst-case grading noise levels are considered to be representative of worst-case noise conditions for purposes of this construction noise impact analysis.

The nearest sensitive receivers to the construction activity within the WSP plan area would be 8 of the 20 single-family dwellings within the Shannon Ranch complex at the southwest corner of Avenal Cutoff Road and Lincoln/Gale Avenue, and the 2 single-family residences at the Stone Land Company Ranch on the south side of Nevada Avenue, 1.4 miles east of Avenal Cutoff Road. These residences would be subject to varying noise levels depending on their distance from the nearest construction noise, as discussed previously. Also, since ambient noise levels at some residences are higher than at others, the noise standards applicable to the dwellings would vary, as shown in Table NOI-4. At the Shannon Ranch, there are three discrete groups of dwellings facing the plan area where noise conditions vary from one group to the other; e.g., 5 dwellings facing east along Avenal Cutoff Road; 2 dwellings facing north along Lincoln/Gale Avenue; and 1 dwelling at the south end of 28th Avenue just north of Avenal Cutoff Road. The noise impact analysis for the Shannon Ranch dwellings is broken down to address each of the 3 dwelling groups separately. (The remaining 12 dwellings in the western portion of the Shannon Ranch complex would be at least 300 feet from the nearest WSP construction and would not be subject to significant noise impacts, as discussed below.) At the Stone Land Company Ranch, the 2 affected dwellings are similarly situated and thus are not considered separately from each other. The potential construction noise impacts that would occur at each residential receptor location are addressed below and summarized in Table NOI-5 (next page).

As shown in Table NOI-5 (next page), the noise data applicable to the affected dwellings is expressed in terms of two different metrics – maximum instantaneous noise (L_{max}) and hourly average noise (L_{eq}). This reflects the metrics used to establish the Kings County noise standards contained in Noise Element Table N-9 (reproduced in Section *3.10.2. Regulatory Context* above). As shown in Table NOI-5, the applicable L_{eq} standards are more stringent in effect than the L_{max} standards in that greater distances from construction activity are required under the L_{eq} metric to meet the applicable noise standard. (This is due to the fact that the primary ambient noise source is traffic on nearby roadways. Since this traffic noise is relatively constant, the average hourly noise level [L_{eq}] will be relatively close to the maximum noise level [L_{max}], i.e., within about 10 dBA. By comparison, the nominal County standards for L_{eq} and L_{max} are 20 dBA apart. In addition, the high ambient traffic noise results in a substantial upward adjustment to the applicable L_{eq} standard [i.e., by as much as 15 dBA] whereas the upward adjustment for the L_{max} standard is only 5 dBA, which makes the adjusted L_{eq} relatively more stringent than the L_{max} metric. As shown in Table NOI-3, the result here is that L_{eq} metric becomes more stringent than the L_{max} standard in absolute terms, in that a greater distance from the noise source is required to meet the standard.) Therefore, compliance with the L_{eq} standards would automatically result in compliance with the L_{max} standards. For simplicity, the following discussion of construction noise impacts is therefore expressed only in terms of the L_{eq} standard since it results in a more conservative analysis of potential noise impacts; i.e., there are no scenarios under which application of the L_{max} standard would result in a finding of greater noise impact. In other words, the L_{max} standard is encompassed by the L_{eq} standard for purposes of this CEQA analysis of construction noise impacts. However, in cases where the L_{eq} standard is exceeded, the L_{max} is also considered in making the determination of significance.

TABLE NOI-5
CONSTRUCTION NOISE LEVELS AT RESIDENTIAL RECEPTOR LOCATIONS

Residential Receptor Location	Distance between nearest dwelling and WSP boundary (feet)	Hourly Average Noise Level – L_{eq}			Maximum Noise Level – L_{max}		
		Highest noise level at dwelling façade (based on project noise of 81 dBA L_{eq} @ 50 feet)	Applic-able Standard (dBA L_{eq})	Distance where standard is met (feet)	Highest noise level at dwelling façade (based on project noise of 85 dBA L_{max} @ 50 feet)	Applic-able Standard (dBA L_{max})	Distance where standard is met (feet)
Shannon Ranch w/s Avenal Cutoff Road	170	70	70	170	74	80	90
Shannon Ranch s/s Lincoln Ave/ Gale Ave	65	**79**	70	170	**83**	80	90
Shannon Ranch south end 28th Ave, w/s Avenal Cutoff Rd.	250	67	70	170	71	80	90
Stone Land Co. Ranch s/s Nevada Ave, east of Avenal Cutoff Road	180	**70**	60	530	74	80	90

Notes:
1) Noise standards adjusted to encompass ambient noise levels, per Kings County Noise Element (see Table NOI-3).
2) Daytime standards applied only since no construction is anticipated during nighttime hours.
3) **Bold** numbers indicate exceedances of applicable noise standard.
4) See Figure NOI-1 for locations of residential receptors.
5) 1 dBA of excess attenuation would be expected at Shannon Ranch receptors (w/s Avenal Cutoff Road due to intervening dense vegetation.
Source: Illingworth & Rodkin

The potential construction noise impacts at each of the residential receptor locations are discussed in detail below and summarized in Table NOI-5 above.

Shannon Ranch

Dwelling Group 1 – West Side of Avenal Cutoff Road – This includes the 5 residences fronting on Avenal Cutoff Road, except for the dwelling on the corner of Lincoln/Gale Avenue, which is included in the second group discussed below. The front facades of these dwellings are all approximately 170 feet from the nearest WSP plan area boundary across Avenal Cutoff Road and are buffered by dense vegetation, which is conservatively estimated to provide about 1 dBA of excess attenuation (Bies 2003). Given the relatively high ambient noise levels of 68 dBA L_{eq} at the dwelling facades, the applicable noise standard increases to 70 dBA L_{eq} pursuant to the Kings County Noise Element. When grading and construction activity is nearest to these dwellings, the highest average hourly noise levels would be 70 dBA L_{eq}, which would meet the applicable threshold of 70 dBA L_{eq}. Maximum noise levels would reach 74 dBA L_{max} at this location and would be well under the applicable maximum noise standard of 80 dBA L_{max}. All construction activity beyond 170 feet of these dwellings would comply with the County's noise standards, and the noise impact to these receptors would be *less than significant*.

Dwelling Group 2 – South Side of Lincoln/Gale Avenue – This group consists of two residences, located on the south side Lincoln/Gale Avenue just west of Avenal Cutoff Road. (Note: Lincoln Avenue becomes Gale

Avenue at the Fresno County line 900 feet to the west.) The façade of the dwelling nearest to the road right-of-way is 65 feet from the WSP plan area boundary across Lincoln Avenue. Given that the ambient noise level of 67 dBA L_{eq} at these building facades exceeds the County's nominal 55 dBA L_{eq} standard, the applicable noise standard increases by 15 dBA to 70 dBA L_{eq} pursuant to the Kings County Noise Element. When grading and construction activity are nearest to these dwellings, the highest average hourly noise levels would be 79 dBA L_{eq}, which exceeds the applicable threshold by 9 dBA. However, the noise standard would be violated only by construction activity that occurs within 170 feet of this dwelling, which would apply to construction within the southern-most 105 feet of nearest part of the plan area. This area would represent a very small portion of the solar PV development that would occur within the plan area, and the grading and construction activity along this edge of the project would be temporary and brief. Since the County's 35-foot setback requirement would apply, the nearest structures, e.g., solar arrays, transformer/inverter enclosures, O&M facilities, would be located at least 100 feet from these dwellings. Within the 35-foot setback area, only light grading for unpaved perimeter driveways and installation of boundary fencing would occur. Thus, the heaviest grading and construction activity that would adversely affect these 2 dwellings would occur in a 70-foot wide band located between 100 and 170 feet from the dwelling facades. The total construction area that would generate noise in excess of 70 dBA L_{eq} at these nearest two residences would be less than 0.5 acres. Given that the typical installation pace for solar arrays is approximately 2 days per MW (0.8 days for site preparation, and 1.2 days for installation of arrays), and since each MW of solar arrays occupies a gross area of about 10 acres, this indicates an overall construction pace of 5 acres per day. Therefore, the duration of construction within the 0.5-acre area where construction noise would result in noise levels of 70 dBA L_{eq} or more would be less than ½ day. All construction activity beyond 170 feet of these dwellings would comply with the County's noise standards. Given the small number of sensitive receptors (2 dwellings) that would be temporarily affected, and the very brief duration of the loudest construction activity in proximity to the residential receptors, the noise impact to these receptors would be *less than significant*

Dwelling Group 3 – West Side of 28th Avenue – This group consists of a single residence at the southern end of the north-south oriented row of single-family homes along the west side of 28th Avenue in the interior of the Shannon Ranch Complex. The façade of this dwelling is 250 feet from the nearest WSP boundary across Avenal Cutoff road to the southeast. Given the relatively high ambient noise level of 66 dBA L_{eq} at this building facade, the applicable noise standard increases to 70 dBA L_{eq} pursuant to the Kings County Noise Element. During times when construction activity would be nearest to these dwellings, the highest average hourly noise levels would be 70 dBA L_{eq} or lower. These noise levels would not exceed the applicable County noise standard of 70 dBA L_{eq}. Therefore, the noise impact upon these residences due to construction activity within the WSP plan area would be *less than significant*.

Dwellings in Western Portion of Shannon Ranch Complex – There are 12 additional single-family dwellings in the western interior portion of the Shannon Ranch complex. These residences are located between 305 feet and 670 feet from the nearest boundary of the WSP plan area. During times when construction activity would be nearest to these dwellings, the highest average hourly noise levels would be 70 dBA L_{eq} or lower. These noise levels would not exceed the applicable County noise standard of 70 dBA L_{eq}. Therefore, the noise impact upon these residences due to construction activity within the WSP plan area would be *less than significant*.

Stone Land Company Ranch

There are 2 single-family residences at the Stone Land Company Ranch on the south side of Nevada Avenue, 1.4 miles east of Avenal Cutoff Road. The front facades of both of these dwellings are approximately 180 feet from the WSP plan area boundary across Nevada Avenue. Given that the ambient

noise level of 57 dBA L_{eq} at the dwelling facades exceeds the County's nominal noise standard of 55 dBA L_{eq}, the applicable noise standard increases to 60 dBA L_{eq} pursuant to the Kings County Noise Element. When grading and construction activity is nearest to these dwellings, the highest average hourly noise levels would be 70 dBA L_{eq}, which exceeds the applicable threshold by 10 dBA. However, the maximum noise levels of 74 dBA L_{max} at this location would be well under the applicable maximum noise standard of 80 dBA Lmax. The L_{eq} noise standard would potentially be violated by construction activity that occurs within 530 feet of these dwellings. In this context, it is important to note that the WSP-South to Gates Gen-Tie transmission line would run along the north side of Nevada Avenue opposite the Stone Land Company Ranch. Assuming a 350-foot wide transmission right-of-way, as planned, the nearest WSP solar development would occur 530 feet from the subject dwellings. [The noise impacts associated with construction of the gen-tie along Nevada Avenue are addressed below.] Thus, the heaviest grading and construction activity in proximity to these 2 dwellings would occur at least 530 feet from the dwelling facades. All construction activity beyond 530 feet of these dwellings would comply with the County's noise standards. As such, the noise levels at the 2 affected dwellings would not exceed the County's L_{eq} standard but would be well below the County's L_{max} standard. Therefore, the noise impact to these receptors due to WSP solar development would be *less than significant.*

WSP Gen-Tie Corridors

It is anticipated that the gen-tie projects would be constructed in different years with each gen-tie line requiring less than one year to complete construction. The general sequence of activities for construction of the gen-tie projects would involve the following steps: clearing of ROW and staging areas; construction of access driveways; installation of tower footings and structures; and conductor stringing. These construction activities would proceed in step-wise fashion from one end of the gen-tie corridor to the other, and as such the duration of construction at any given location would be relatively brief.

The noisiest construction activity would occur during site preparation of tower sites and staging areas, when most construction equipment would be used. This equipment typically includes dozers, graders, compactors, auger drill rigs, and trucks, which produce maximum noise levels ranging from 80 to 85 dBA at 50 feet. The maximum noise level generated by several pieces of equipment operating continuously at a distance of 50 feet would be about 90 dBA. Throughout the gen-tie corridors, most residential receptors would be located at least 500 feet from construction activity, except along the WSP-South to Gates Gen-Tie where there are 10 single-family dwellings located approximately 125 feet to 180 feet from the edge of the corridor.

At the Stone Land Company Ranch in Kings County, where the 2 existing residences would be located at least 180 feet from the southern gen-tie corridor, where the maximum noise levels would be up to 78 dBA, given that maximum noise levels would decrease at a rate of 6 dBA per doubling of distance from a point source. (Note: These calculated noise levels apply to conventional construction equipment and techniques. The potential noise levels associated with special construction techniques, such as helicopter construction, are discussed under Impact NOI-2 below.) As discussed above and shown in Table NOI-5, the Kings County Noise Element standard for maximum noise levels is 80 dBA L_{max} at the Stone Land Company Ranch. Therefore, the maximum noise levels of 78 dBA that would occur at the 2 residential facades at the ranch would not exceed the applicable Kings County noise standard, and the noise impact from gen-tie line construction near the ranch dwellings would be *less than significant*.

At the series of 8 dwellings on the south side of Jayne Avenue in Fresno County, the nearest existing dwellings would be 125 feet from the southern gen-tie corridor, where the maximum noise levels would be up to 83 dBA. The Fresno County Municipal Code establishes maximum permissible exterior noise

levels of 70 dBA during daytime hours of 7 AM to 10 PM. Therefore, construction activity in proximity to the nearest residence could exceed the maximum permissible noise level by 13 dBA if a gen-tie monopole were constructed directly opposite an existing dwelling. However, it is expected that the nearest monopoles would be sited at least 250 feet from the nearest dwelling, where maximum noise levels would be up to 77 dBA. However, almost all gen-tie construction would occur at distances of 600 feet or more from the affected residences, where maximum noise levels would be 70 dBA or lower, and within Fresno County noise standards. In addition, construction noise sources are exempt from the Fresno County noise standards, provided the construction activities do not take place before 6 AM or after 9 PM on weekdays, or before 7 AM or after 5 PM on Saturdays or Sundays (see Section *3.10.2. Regulatory Context* above). It is anticipated that transmission construction would occur only within the hours prescribed in the ordinance. However, if nighttime construction is determined to be necessary (e.g., during conductor stringing over State highways), a variance would be required from Fresno County prior to such nighttime construction in proximity to any residences. Such a variance would be conditioned to minimize noise and nuisance effects. Since construction of the gen-tie line segments in Fresno County would not violate the noise provisions of the Fresno County Municipal Code, the impact from transmission construction near sensitive noise receptors within the County would be *less than significant*.

As mentioned, gen-tie construction activities would move along the gen-tie corridors and would only take place near any individual receptor for a relatively brief period. Given that maximum construction noise levels would not violate the noise provisions applicable in either county where the gen-tie lines would be constructed, and that construction activity duration at any given location along the transmission corridors would be short, the noise impacts associated with conventional construction equipment and techniques would be *less-than-significant*.

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

Impact NOI-2. Noise from Helicopter Construction

***Westlands Solar Park*. No helicopter construction is anticipated within the WSP plan area; therefore, no noise impacts would occur as a result of helicopter use. (*No Impact*)**

***WSP Gen-Tie Corridors*. If helicopter construction is employed for gen-tie line construction at road crossings or canal crossings, temporary increases in noise levels at sensitive receiver locations may result. (*Less-than-Significant Impact*)**

This impact analysis addresses significance criteria 'a' and 'd' above.

Westlands Solar Park

It is anticipated that all construction within the WSP plan area can be accomplished by conventional ground-based equipment, and that helicopter construction would not be employed. Although helicopters are sometimes used for conductor stringing conductor pilot lines where on-site transmission lines cross arterial roadways, this would not occur within WSP since Kings County does not permit aerial crossings of arterial roads by transmission lines would requires any such crossings to be underground (e.g., Avenal Cutoff Road, Laurel Avenue, Nevada Avenue). Even if overhead crossings of County roads were permitted, the roads are relatively narrow and conductors could be readily strung with cranes to span the roadways. Due to the generally favorable access conditions throughout the WSP site, it is not anticipated that helicopters would be used in construction of internal power collection or gen-tie lines. As such, there would be *no noise impacts* would occur as a result of helicopter construction within the within the WSP plan area.

WSP Gen-Tie Corridors

Within the planned transmission corridors, helicopter construction may be employed to cross the San Luis Canal/California Aqueduct or SR-269, which may involve spans that are too long to be strung using cranes. However, due to the relatively high cost of helicopter construction compared to conventional construction techniques, it is expected that helicopters would be used only if no other options are available.

If used in conductor stringing, the helicopter would lift the pilot string over the sensitive feature for placement on the tower structures on either side. In both instances, the helicopter tasks would be performed in less than one day.

The operation of a helicopter during construction would generate maximum noise levels of approximately 80 dBA at 200 feet (USBLM 2013, p. 3.23-11). At a distance of 400 feet, the helicopter noise would decrease to approximately 74 dBA, based on decreases of 6 dBA per doubling of distance from a point source. At a distance of 700 feet, helicopter noise would decrease to about 70 dBA. Thus at a distance of 400 feet, noise levels would meet the maximum permissible daytime noise levels of 75 dBA in Kings County, and beyond 700 feet noise levels would not exceed the maximum permissible daytime noise levels of 70 dBA in Fresno County for residential receivers (this ignores the exemptions for daytime construction noise in Fresno County).

As mentioned, the most likely instances where helicopter construction has a potential to be required is in crossing the San Luis Canal/California Aqueduct and/or SR-267. The nearest existing dwellings to both of these features are the 8 dwellings along the south side of Jayne Avenue. The California Aqueduct is at approximately 1 mile east of the nearest affected residence, and SR-267 is approximately 1.3 miles from the nearest affected residence. At these distances, the maximum noise levels generated by helicopters at the stringing sites would be 53 dBA or lower, well within the 70 dBA daytime standard in Fresno County.

Although the sites for construction staging areas would not be identified until the engineering design stage for the transmission lines, it is expected that the staging areas would be planned to be located well away from existing residential receivers. Helicopters flying between construction staging areas and work sites could briefly result in noise levels higher than 75 dBA if the flight paths bring them closer than 400 feet to existing residences. However, it is expected that transiting helicopters would make every effort to stay clear of existing dwellings, and thus would not approach within 400 feet of any residences without a

reason for doing so. Therefore, the noise impacts related to helicopter construction for the WSP gen-tie lines are anticipated to be *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

Impact NOI-3. Construction Traffic Noise

***Westlands Solar Park*. Construction of the WSP solar projects would result in temporary increases in traffic noise, generated by delivery trucks and construction worker trips, along roadways providing access to the WSP plan area. (*Less-than-Significant Impact*)**

***WSP Gen-Tie Corridors*. Construction of the WSP gen-tie lines would result in temporary increases in traffic noise, generated by delivery trucks and construction worker trips, along roadways providing access to the gen-tie work sites. (*Less-than-Significant Impact*)**

This impact analysis addresses significance criteria 'a' and 'd' above.

Westlands Solar Park

During construction of WSP solar facilities, traffic would be generated by construction deliveries and worker commute trips along area roadways serving the WSP plan area. The increased roadway noise levels resulting from WSP construction traffic were calculated by Illingworth & Rodkin based on worst-traffic volumes for construction. As noted in Section *3.13. Traffic and Circulation*, the worst-case near-term (2016) scenario for construction traffic generation consists of two 250 MW solar projects being constructed concurrently, with peak construction activity for both occurring simultaneously.

The roadway segments of concern are those where existing sensitive receivers are located along the roadways receiving WSP construction traffic. Two of the sensitive receivers subject to potential noise increases due to WSP construction traffic would be the same as those discussed for on-site noise sources. These include the dwellings at the Shannon Ranch Complex at Avenal Cutoff Road and Lincoln/Gale Avenue, and the residences at the Stone Land Company Ranch on Nevada Avenue, between Avenal Cutoff Road and SR-41.

As discussed under Section *3.10.1. Environmental Setting* above, there are two additional clusters of existing residences located west of the WSP plan area in Fresno County that would be subject to increased traffic noise from WSP construction delivery truck traffic. The first of these is a group of 8 single-family dwellings located on the south side of Jayne Avenue, approximately 3.5 miles west of the WSP plan area, where the dwellings are located approximately 100 feet from the roadway centerline. The second group consists of 4 single-family dwellings located on the south side of Gale Avenue,

approximately 4.3 miles west of the WSP plan area, where the residences are located approximately 150 feet from the roadway centerline.

The ambient noise levels measured at these receptor locations are shown in Table NOI-6, on the next page. The table also shows: the projected noise level increases due to WSP construction traffic; the amount of noise increase considered significant for the ambient condition; and whether the increased noise at each location represents a significant noise impact. As provided in Kings County Noise Element Policy B1.2.1, the applicable Kings County noise standard is 65 dB CNEL for residential uses in agricultural zones that are subject to transportation noise. (For purposes of establishing the significance threshold for this analysis, the CNEL noise metric is considered equivalent to the L_{dn} metric.) Fresno County also establishes 65 dBA CNEL (or L_{dn}) as the highest normally acceptable noise level for residential uses. In addition to these residential noise thresholds, the Kings County and Fresno County Noise Elements both include provisions that define the magnitude of noise level increase generated by a transportation improvement project that is considered to be significant, with the varying significance thresholds depending on the ambient noise level at the receiver location. In both counties, these policies provide that for locations where the ambient noise level is under 60 dB L_{dn}, a 5 dBA increase would be significant. Where the ambient noise level is between 60 and 65 dBA L_{dn}, a 3 dBA increase would be significant; and where the ambient noise level is over 65 dBA, a noise increase of 1.5 dB would be significant. While the WSP solar facilities would include capacity enhancing transportation projects that would be subject to these incremental noise thresholds, these thresholds are applied here to evaluate the level of impact associated with roadway noise increases resulting from traffic generated by the WSP solar projects.

TABLE NOI-6
CONSTRUCTION TRAFFIC NOISE LEVELS AT RESIDENTIAL RECEPTOR LOCATIONS

Residential Receiver Location	2015 Ambient Day-Night Average Noise Level at 100 feet from Road C/L (dBA L_{dn})	Noise Level with WSP Peak Construction Traffic* (dBA L_{dn})	Noise Level Increase due to WSP Peak Construction Traffic* (dBA L_{dn})	Impact Significance Criterion (dBA increase)[1,2]	Significant Noise Impact?
Shannon Ranch (w/s Avenal Cutoff Rd. at Gale/Lincoln Av.) (LT-3 &ST-4&5)	73[3]	73.4	0.4 dBA	+1.5 dBA	No
Stone Land Co. Ranch (1.4 miles east of Avenal Cutoff Rd.) (LT-2 & ST-2)	61[3]	63.4	2.4 dBA	+3.0 dBA	No
Jayne Avenue (3.5 miles west of Avenal Cutoff Rd.)(LT-1 & ST-1)	68[3]	68.4	0.4 dBA	+1.5 dBA	No
Gale Avenue (4.3 miles west of Avenal Cutoff Rd.)(ST-3)	59[3]	59.1	0.1 dBA	+5.0 dBA	No

* This includes traffic generated by WSP peak construction activity in the near term.
Source: Illingworth & Rodkin

Footnotes:
[1] Kings County Noise Element 2010, Policy B1.2.1, page N-35.
[2] Fresno Co. 2000 General Plan Update – Health & Safety Element (policy HS-G.7) p. 2-176.
[3] Illingworth & Rodkin, Short term and long term noise measurements, December 14, 2015.

As shown in Table NOI-6, the near-term noise increases from WSP construction deliveries and construction worker trips would result in noise level increases ranging from 0.1 to 2.4 dBA at the sensitive receiver locations. The resulting increase in noise levels would not exceed the Impact Significance Criterion at the affected receptors in Kings County and Fresno County. While the increased volume of traffic may be noticeable at the receptor locations, the increased noise levels of up to 2.4 dBA would not represent a significant noise level increase. Therefore, the construction traffic generated by WSP solar projects would result in a *less-than-significant* noise impact.

WSP Gen-Tie Corridors

The construction of the WSP gen-tie projects would involve truck trips for hauling equipment and materials to and from the construction sites, and also commute trips by construction workers arriving and departing the construction sites. As discussed in Section *3.13. Traffic and Circulation*, truck deliveries (including equipment, concrete, and aggregate) would primarily come from the I-5 corridor and then follow local highways and roadways to reach the work sites along the gen-tie corridors. Most construction workers are expected to reside in urban centers in the region, which are largely concentrated along the State Route 99 corridor to the east of the gen-tie corridors. Thus, the truck delivery routes and commute routes would tend not to overlap, except near the access points to the construction sites.

The construction stage with the greatest concentration of workers and truck activity would be during construction of tower foundations. As discussed in Section *3.13. Traffic and Circulation*, the combination of construction worker commute trips plus haul trips would result in a maximum of 108 daily trips at any given tower work site. This would include 44 worker commute trips and 64 haul trips. (Note: The term "trips" refers to trip ends, so one round-trip equals 2 trips.) The worker trips would be concentrated at the beginning and end of work shifts, resulting in 22 AM trips and 22 PM trips. The haul truck trips would occur throughout the day and would average about 9 trips per hour for a 7-hour workday. The tower construction activities would move fairly quickly from one tower site to the next (i.e., no more than 2 days at any tower site). At other construction work sites along the gen-tie corridors, where lower-intensity activities would take place, the concentration of truck deliveries and construction worker activity would be lower than activity levels at tower work sites, with correspondingly lower traffic generation. Given the relatively short duration of construction activity at any given work site along the transmission corridors, the minor increase in traffic levels at any road segment or intersection would be temporary.

The roadway network in the vicinity of the transmission corridors is subject to relatively low traffic volumes typical of the rural setting. Since these roadways currently serve local agricultural operations, dispersed rural residences, and agricultural processing and support facilities, the areas along the roads are currently subject to occasional noise from farm equipment and heavy trucks, as well as light passenger vehicle traffic. The addition of haul truck traffic and commute traffic associated with transmission line construction would likely be noticeable in the areas immediately adjacent to the travel routes. The noise associated with this traffic would increase noise levels by less than 1 dBA L_{dn} over ambient noise levels along roadways subject to the construction traffic. Although noise from individual truck passbys would be noticeable to nearby receptors in the rural noise environment, the noise level increase would be less than the smallest incremental noise threshold considered significant (i.e., 1.5 dBA L_{dn} where ambient noise is over 65 dBA L_{dn}) in all both of the potentially affected counties. Since construction activity would move sequentially along the gen-tie corridors, the noise from construction

traffic would be temporary at any given location, the minor and short-term increase in traffic noise resulting from transmission line construction would represent a *less-than-significant* noise impact.

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

Ground Vibration from Construction Activity

Impact NOI-4. Vibration from Conventional Construction Activities

***Westlands Solar Park*. Construction of the WSP solar facilities would involve the use of heavy equipment and vehicles that would produce vibration; however, the vibration levels would be too low to result in potential damage to buildings or potential annoyance to sensitive receivers. (*Less-than-Significant Impact*)**

***WSP Gen-Tie Corridors*. Construction of the WSP gen-tie projects would involve the use of heavy equipment and vehicles that would produce vibration; however, the vibration levels would be too low to result in potential damage to buildings or potential annoyance to sensitive receivers. (*Less-than-Significant Impact*)**

This impact analysis addresses significance criteria 'b' and 'd' above.

Westlands Solar Park

During construction, the use of heavy equipment such as bulldozers, vibratory drivers, and loaded haul trucks would result in ground borne vibration. Depending on proximity of the receiver to the source of vibration, construction vibration could result in damage to nearby structures or annoyance to humans. Vibration is measured as peak particle velocity (PPV) in inches per second. A PPV of 0.2 inches per second is considered to be the threshold at which there is a risk of architectural damage to buildings with plastered ceilings and walls, while there is a potential for minimal damage to weak or sensitive structures at 0.12 inches per second. Vibrations at 0.2 inches per second are considered bothersome to most people, while continuous exposure to long-term PPV is considered unacceptable at 0.12 inches per second. The level at which humans begin to perceive vibration is 0.015 inches per second. Bulldozers and loaded trucks have a PPV of 0.089 inches per second at a distance of 25 feet, while the vibratory pile drivers have PPV levels ranging from 0.170 to 0.734 inches per second at 25 feet, with the specific levels depending on soil type, equipment type, and other factors (USDOT 2006, p. 12-12).

Within the WSP plan area, the nearest structures to the construction activity would be: 1) residences and ranch operations buildings in the Shannon Ranch complex on the west side of Avenal Cutoff Road, south of Lincoln/Gale Avenue, which would be at least 100 feet from the nearest vibration-producing construction activity (i.e., vibratory driving of support posts for solar arrays); and 2) residences at Stone Land Company

Ranch on the south side of Nevada Avenue, which would be at least 315 feet from the nearest vibration-producing construction activity. At both locations, the potential for greatest vibration would be during vibratory pile driving of the support posts for the solar arrays. Assuming peak vibration levels of 0.734 inches per second at 25 feet, the vibration levels at 100 feet (at Shannon Ranch) would decrease to 0.092 inches per second at the nearest receiver (USDOT 2006, p. 12-11). While this vibration level would be perceptible to receivers at a distance of 100 feet, it would not reach the level that is considered bothersome to people or potentially damaging to structures. At a distance of 315 feet from the vibratory pile driving activity (at Stone Land Company Ranch), PPV would decrease to 0.016 inches per second, which is just above the threshold of human perception for vibration. The majority of construction activity would occur well beyond these distances from the nearest receivers, and therefore any associated vibration would not be noticeable.

As mentioned, the next heaviest equipment that would be used in the WSP plan area would be bulldozers and loaded trucks, which both generate a PPV level of 0.089 inches per second at 25 feet. At the site of the nearest off-site receiver, a distance of at least 100 feet from the on-site construction activity, the PPV level would decrease to 0.011 inches per second. This vibration level would be well below the lower thresholds of potential building damage (i.e., 0.12 in/sec), and below the lower limit of human perception (i.e., 0.15 in/sec). Vibration levels from construction equipment at greater distances would be lower at the receiver sites.

In summary, the heaviest construction equipment that would be used within the WSP plan area would not produce vibration levels that would result in building damage or annoyance to the nearest receivers, and all construction-related vibration would decrease below the threshold of human perception beyond 350 feet from the nearest receivers. Majority of construction activity within the WSP plan area would occur at greater distances from receivers where the associated vibration would not be noticeable. Therefore, the potential vibration impacts due to construction activities within the WSP plan area would be *less than significant*.

WSP Gen-Tie Corridors

Within the gen-tie corridors, the heaviest construction equipment would consist of bulldozers, loaded trucks, and drill rigs (for excavating holes for tower footings), all of which would generate a PPV of 0.089 inches per second at 25 feet. (Non-conventional construction techniques, such as blasting, are not expected to be required.) As noted above, construction-related vibration would decrease below the threshold of human perception beyond 350 feet from the nearest receivers. There are a total of 10 residences located within 350 feet of the gen-tie corridors.

The gen-tie corridors could pass as close as 125 feet to 1 dwelling and several non-residential structures such as ranch buildings and agricultural wells. Assuming, tower construction at the nearest points on the corridor to these receivers (i.e., 125 feet away), the heaviest equipment would generate a PPV of 0.008 inches per second at this distance, which is well below the levels where potential building damage could occur (i.e., 0.12 in/sec), and below the threshold of human perception for vibration (i.e., 0.015 in/sec). Therefore, the potential vibration impacts from conventional equipment used in gen-tie line construction would be *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

Operational Noise

Impact NOI-5. Noise from Project Operations

***Westlands Solar Park*. Noise generated by operation of WSP solar facilities would result in a small increase noise levels in the vicinity. (*Less-than-Significant Impact*)**

***WSP Gen-Tie Corridors*. Noise generated by operation of WSP gen-tie lines would result in a small increase noise levels in the vicinity. (*Less-than-Significant Impact*)**

This impact analysis addresses significance criteria 'a' and 'c' above.

Westlands Solar Park

The primary noise sources associated with the operation of solar generating facilities within the WSP plan area would include: 1) maintenance activities and security patrols; 2) panel washing, and; 3) electrical equipment sound from inverters, transformers, and trackers. The potential noise impacts associated with each of these operational sources is discussed in turn below. (Note: Operational noise from transmission lines and substations is addressed subsequently under Impacts NOI-7 and NOI-8, respectively. Noise from traffic generated during solar project operations is addressed under Impact NOI-6.)

Maintenance and Security Activities

Maintenance crews and security staff would generate noise primarily while traversing the solar facilities in the performance of routine surveillance, inspection, maintenance and repair tasks. The operations and security staff would travel along maintenance access driveways in pickup trucks and all-terrain vehicles. The potential for noise impacts to sensitive receivers would occur when these vehicles are traveling along perimeter driveways nearest to the Shannon Ranch and Stone Land Company Ranch. The maximum noise level generated by a pickup truck would be 75 dBA L_{max} at 50 feet (see Table NOI-1 for explanation of noise metrics). The nearest sensitive receivers at the Shannon Ranch would be 65 to 165 feet from the nearest WSP perimeter roads. Noise levels generated by pickup trucks would decrease to 73 dBA L_{max} at 65 feet and 65 dBA L_{max} at 165 feet (applying the 6 dBA reduction for doubling of distance from a point source). These noise levels would be below Kings County's 75 dBA L_{max} standard for residential receivers (see Table NOI-3). At the Stone Land Company Ranch, the nearest sensitive receivers would be located 180 feet from the nearest WSP perimeter road. The noise levels at the residential facades would be as high as 64 dBA L_{max}, which is well below the applicable Kings County noise standard of 75 dBA L_{max}. Further, the noise generated by pickup trucks would be expected to below the noise generated by traffic along roadways separating the WSP plan area from the nearest receptors. Therefore, the potential noise impacts due to routine maintenance and security activities would be *less than significant*.

Panel Washing

As described in Chapter *2. Project Description*, it is expected that solar panels would be cleaned 4 times per year. Panel washing crews would traverse the solar facilities in purpose-built lightweight to medium duty trucks which would be equipped with water tanks and high-pressure sprayers. The trucks would generate noise levels of 75 dBA L_{max} at 50 feet, and the air compressors for the sprayers would generate noise levels of 78 dBA L_{max} at 50 feet (CPUC 2009) with combined noise levels as high as 80 dBA L_{max}. While a solar facility may have several panel washing crews working concurrently, it is assumed that only one crew would be operating within a particular solar block or array at any given time, so that the crews would always be at least 500 feet apart. As such, the potential for additive noise from more than one panel washing crew operating in the same area would be negligible. The nearest arrays within the WSP plan area would be located 100 feet from the nearest residential receivers at the Shannon Ranch. At this distance, the maximum noise level would be 74 dBA L_{max} (with noise decreasing at 6 dBA for doubling of distance from a point source). (The L_{max} descriptor is the appropriate metric since panel washing noise would not be continuous.) This would be below the County's applicable standard of 75 dBA L_{max}. At the Stone Land Company Ranch, the nearest residential receivers would be located at least 315 feet from the nearest solar arrays (assuming the 100-foot Gen-Tie right-of-way along the south WSP boundary along Nevada Avenue). At this distance, the maximum noise level from panel washing activity would be 65 dBA L_{max}, which would be below the County's applicable standard of 75 dBA L_{max}. Therefore, the potential noise impacts due to panel washing would be *less than significant*.

Mechanical Noise from Inverters, Transformers, and Trackers

Dispersed throughout the solar fields would be inverters and transformers for every 1 to 2 MW of solar generation. Typically, the inverter would be contained in a metal enclosure, while the transformer would not be enclosed. The inverters and transformers would operate throughout the day, but would not operate at night when the solar panels are not generating power. The maximum noise levels generated by the enclosed inverters would be 50 dBA at 50 feet, and the maximum noise levels generated by the transformers would be 38 dBA (CPUC 2009) with a combined noise level of about 51 dBA L_{max} at 50 feet. As discussed in Chapter *2. Project Description*, it is expected that most if not all solar generating facilities in WSP will employ horizontal trackers that allow the module arrays to follow the sun from east to west. These motor-driven trackers emit mechanical noise at regular intervals as they make incremental adjustments to the inclination of the arrays. The noise generated by the trackers is roughly equivalent to noise levels generated by inverters and transformers. The combined noise level from simultaneous operation of inverters, transformers, and trackers would be about 52 dBA L_{max} at 50 feet.

The nearest sensitive receivers to the inverters/transformer pads and trackers could be as close as 100 feet from the nearest residents at Shannon Ranch, conservatively assuming that the inverter and transformer would be (atypically) located at the edge of the solar block nearest to the residences. At this distance, the noise level generated by combined inverter, transformer, and tracker operation would be 46 dBA L_{max}. These noise levels would be well below the County's applicable standard of 75 dBA L_{max}. At the Stone Land Company Ranch, the nearest residential receivers would be located at least 315 feet from the nearest inverter/transformer pads and trackers (assuming the 100-foot gen-tie easement along the south WSP boundary along Nevada Avenue). At this distance, the maximum noise level from combined inverter, transformer, and tracker operation would be 37 dBA L_{max}, which would be well below the County's applicable standard of 75 dBA L_{max}. Therefore, the potential impacts due to mechanical operational noise would be *less than significant*.

In summary, since the noise generated by operational sources at the solar generating facilities would not exceed Kings County's applicable noise standards, the potential noise impacts from operation of the solar generating facilities at WSP would be *less than significant*.

WSP Gen-Tie Corridors

The primary noise source associated with the completed gen-tie facilities would be maintenance activities. (Note: The noise emitted by the gen-tie lines, and the associated off-site substation noise, is addressed subsequently under Impacts NOI-7 and NOI-8, respectively.) Maintenance activities would include annual visual inspections of the transmission lines and access roads. These activities would typically involve the use of light duty trucks, although helicopters may be sometimes be used in areas that are not accessible by truck. The maintenance and inspection activities would occur infrequently and noise from truck or helicopter pass-bys would be short in duration. Most sensitive receivers would be located at least 350 feet from the transmission corridors. At this distance, the maximum noise from helicopter pass-bys would be 75dBA L_{max}, and noise from light truck pass-bys would be 58 dBA L_{max}.

Within Fresno County, the helicopter noise would exceed the applicable 70 dBA L_{max} noise limit at a distance of approximately 625 feet. There are 10 residences that are located between 125 and 625 feet from the gen-tie corridors in Fresno County. If helicopter inspections are required, the noise from helicopter passbys would be very brief in duration and therefore would not represent a significant noise impact. In addition, maintenance work performed by public or private utilities in Fresno County is exempt from the County's noise standards (Fresno Ordinance Code Section 8.40.060(G)).

In summary, since the routine inspection activities associated with the transmission lines would not violate the applicable County Code noise control provisions, the potential noise impacts associated with transmission line operation would be *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

Impact NOI-6. Off-Site Traffic Noise from Project Operations

***Westlands Solar Park*. Traffic generated by the operation of the WSP solar facilities would result in a small increase in traffic along roadways in the vicinity. (*Less-than-Significant Impact*)**

***WSP Gen-Tie Corridors*. Traffic generated by the operation of the WSP gen-tie facilities would result in a small increase in traffic along roadways in the vicinity. (*Less-than-Significant Impact*)**

This impact analysis addresses significance criteria 'a' and 'c' above.

Westlands Solar Park

Upon completion of each WSP solar generating facility, operational activity would result in increased traffic from operational and maintenance staff traveling to and from the solar facilities, and from delivery trucks. As discussed in Section 3.*13. Traffic and Circulation*, a typical 250 MW solar development within WSP would generate an average of 10 daily round trips by workers and 10 round trips by delivery trucks.

The employee trips would occur mainly during the AM and PM commute periods, while delivery truck traffic would occur throughout the day. These trips would originate from the surrounding region and beyond, and would be broadly dispersed over the regional roadway network. The roadway segments nearest to the WSP plan area would receive the greatest increases in traffic due to WSP operational traffic.

The sensitive receptors located near the WSP plan area would be subject to the greatest potential increases in traffic noise. The residential receptors of concern would be the same as those identified in the discussion of construction traffic noise under Impact NOI-3 above, and include clusters of dwellings at the following locations: 1) Shannon Ranch at Avenal Cutoff Road and Lincoln/Gale Avenue; 2) Stone Land Company Ranch on Nevada Avenue 1.4 miles east of Avenal Cutoff Road; 3) Jayne Avenue, 3.5 miles west of Avenal Cutoff Road; and 4) Gale Avenue, 4.3 miles west of Avenal Cutoff Road.

Due to the incremental nature of WSP buildout, the overall intensity of operational activity within the WSP plan area will increase gradually over time. At full buildout, the operational traffic generated by all WSP solar facilities (i.e., 320 daily trips) would represent approximately 30 percent of the daily traffic generated during the peak construction period (i.e., 1,085 daily trips). In addition, the characteristics of the traffic would change, especially truck traffic. During construction, most trucks would consist of large material and equipment transport trucks, while operational truck traffic would large consist of smaller service and delivery trucks.

The increased roadway noise levels resulting from WSP operational traffic were calculated by Illingworth & Rodkin based on traffic volumes presented in Section *3.13. Traffic and Circulation*. Since WSP buildout is expected to occur in about 2030, the far-term noise and traffic projections for 2035 were used to represent worst-case baseline conditions in the analysis of operational traffic noise. The pre-project noise levels projected for the receptor locations in 2035 are shown in Table NOI-7 below. The table also shows the projected noise level increases due to WSP operational traffic, the amount of noise increase considered to be significant for the baseline condition, and whether the increased noise at each location represents a significant noise impact. As discussed in Section *3.10.2. Regulatory Context* above, the applicable Kings County noise standard is 65 dB CNEL (or L_{dn}) for residential uses in agricultural zones that are subject to transportation noise. Kings County Noise Element Policy B1.2.1 provides that where ambient noise levels exceed this threshold, the incremental noise increase that is considered to be significant depends on the ambient noise level at the receiver location. These noise impact criteria are also applied by Fresno County. In particular, locations where the ambient noise level is under 60 dB L_{dn}, a 5 dBA increase would be significant. Where the ambient noise level is between 60 and 65 dBA $_{Ldn,}$ a 3 dBA increase would be significant; and where the ambient noise level is over 65 dB dBA L_{dn}, a noise increase of 1.5 dB would be significant. (Although the Kings County Noise Element applies these noise increment thresholds to noise increases resulting from capacity enhancing transportation projects, as discussed in 'Significance Criteria' above, they are also applied in this EIR as a significance threshold for noise increases due to traffic volume increases resulting from WSP solar development. It is noted that

while the transportation noise thresholds in the Kings County Noise Element are expressed in terms of CNEL, the noise increments that would define a significant noise increase are expressed in L_{dn} in the Noise Element. Since the CNEL and L_{dn} metrics are very similar, they are considered equivalent for purposes of comparing noise level increases with the noise standards for purposes of this analysis.)

As shown in Table NOI-7, the 2035 noise levels along Avenal Cutoff Road at the Shannon Ranch complex would exceed the Kings County noise standard of 65 dBA L_{dn} under baseline and post project conditions. However, as discussed above, transportation noise increases under these conditions would be considered significant only if the noise increase is 1.5 dBA or more over baseline. As shown in Table NOI-7, noise level increases resulting from project operations after WSP buildout were calculated to be 0.3 dBA or less at the sensitive receptor locations within the Shannon Ranch complex, which is less than the applicable noise impact criterion of 1.5 dBA increase for transportation sources. At the other residential receiver locations, the noise increments due to WSP project operations are also below the applicable thresholds. Therefore, the noise impacts to the residential uses in the area due to operational traffic after WSP buildout would be *less than significant*.

TABLE NOI-7

OPERATIONAL TRAFFIC NOISE LEVELS AT RESIDENTIAL RECEPTOR LOCATIONS

Residential Receiver Location	2030 Ambient Day-Night Average Noise Level at 100 feet from Road C/L (dBA L_{dn})	2030 Noise Level with WSP Peak Operational Traffic (dBA L_{dn})	2030 Noise Level Increase due to WSP Peak Operational Traffic (dBA L_{dn})	Applicable Impact Criterion (dBA increase)[1,2]	Significant Noise Impact?
Shannon Ranch (w/s Avenal Cutoff Rd. at Lincoln Av.)	76.2[3]	76.2[4]	0.0 dBA	+1.5 dB	**No**
Stone Land Co. Ranch (1.4 miles east of Avenal Cutoff Rd.)	64.5[3]	64.8[4]	0.3 dBA	+3.0 dBA	**No**
Jayne Avenue (3.5 miles west of Avenal Cutoff Rd.)	71[3]	71[4]	0.0 dBA	+1.5 dB	**No**
Gale Avenue (4.3 miles west of Avenal Cutoff Rd.)	62[3]	62[4]	0.0 dBA	+3.0 dB	**No**

Footnotes:
[1] Kings County Noise Element 2010, Policy B1.2.1, page N-35.
[2] Fresno Co. 2000 General Plan Update – Health & Safety Element (policy HS-G.7) p. 2-176.
[3] Illingworth & Rodkin, Short-term and long term noise measurements, December 14, 2015 (in App. E of this EIR).
[4] Based on I&R's short-term noise measurements and traffic volume increase.
Source: Illingworth & Rodkin

Combined Construction and Operational Traffic

Throughout most of the WSP buildout period, some solar facilities will be fully operational while others are still under construction. The volume of traffic generated by overall operations within WSP will steadily increase during the buildout period. At the time when the final solar facilities are being constructed, operational traffic will be near peak levels. Thus, the highest WSP traffic volumes would be

generated during the final phases of WSP development when traffic from peak construction activities combines with traffic from near-peak operational activities. This worst-case condition would occur temporarily, and for purposes of this analysis it is assumed that peak construction activity would occur from the simultaneous construction two 250 MW solar facilities in 2030.

As shown in Table NOI-8, the combined traffic noise increase from peak construction activity and peak operational activity would result in noise level increases ranging from 0.1 to 1.6 dB at the receptor locations. These noise level increases would not exceed the applicable noise impact criteria. Therefore, the worst-case traffic generation from combined construction and operational activities would result in a *less-than-significant* noise impact.

TABLE NOI-8

2030 OVERALL TRAFFIC NOISE LEVELS AT RESIDENTIAL RECEPTOR LOCATIONS

Residential Receiver Location	2030 Ambient Day-Night Average Noise Level at 100 feet from Road C/L (dBA L_{dn})	2030 Noise Level with WSP Peak Operational plus Construction Traffic (dBA L_{dn})	2030 Noise Level Increase due to WSP Peak Operational plus Construction Traffic (dBA L_{dn})	Applicable Impact Criterion (dBA increase)[1,2]	Significant Noise Impact?
Shannon Ranch (w/s Avenal Cutoff Rd. at Lincoln Av.)	76.2[3]	76.4[4]	0.2 dBA	+1.5 dBA	**No**
Stone Land Co. Ranch (1.4 miles east of Avenal Cutoff Rd.)	64.5[3]	66.1[4]	1.6 dBA	+3.0 dBA	**No**
Jayne Avenue (3.5 miles west of Avenal Cutoff Rd.)	71[3]	71.2[4]	0.2 dBA	+1.5 dBA	**No**
Gale Avenue (4.3 miles west of Avenal Cutoff Rd.)	62[3]	62.1[4]	0.1 dBA	+3.0 dBA	**No**

Footnotes:
[1] Kings County Noise Element 2010, Policy B1.2.1 page N-35.
[2] Fresno Co. 2000 General Plan Update – Health & Safety Element (policy HS-G.7) p. 2-176.
[3] Illingworth & Rodkin, Long-term noise measurements, December 14, 2015 (in Appendix E of this EIR).
[4] Calculations based on I&R's short-term noise measurements and traffic volume increase.
Source: Illingworth & Rodkin 2016

WSP Gen-Tie Corridors

Once completed, the operation of the transmission lines would generate very little traffic. During annual inspection and maintenance activities, light utility trucks would traverse local roadways to access transmission towers and maintenance roads. The transmission lines and components would be inspected approximately once per year by a small crew in a utility truck. Occasional maintenance and repairs would be undertaken as needed, and are expected to be infrequent. The additional traffic noise generated by these occasional inspection, maintenance, and repair trips would be negligible (i.e., several trips per year at any given location) and would not result in increased average noise levels along the affected roadways (i.e., a traffic volume increase of 26 percent would produce a 1 dBA increase in noise levels). Therefore,

the potential traffic noise impacts associated with transmission line operation would be *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

Impact NOI-7. Audible Noise from Corona Discharge on Transmission Lines

***Westlands Solar Park*. During wet conditions, corona discharge from transmission conductors within the WSP plan area would generate noise. (*Less-than-Significant Impact*)**

***WSP Gen-Tie Corridors*. During wet conditions, corona discharge from conductors in the WSP gen-tie facilities would generate noise. (*Less-than-Significant Impact*)**

This impact analysis addresses significance criteria 'a' and 'c' above.

Westlands Solar Park

The solar facilities within the WSP plan area will include high-voltage internal gen-tie lines to transmit solar-generated power to the external gen-tie lines (and/or two switching stations within WSP). Once energized, the conductors would be subject to corona discharge. This involves the breakdown of air into charged particles caused by the electrical field at the surface of a conductor, which can result in a crackling or hissing noise and very small amounts of light. Audible noise from corona discharge varies depending on the voltage of the line and is locally intensified by irregularities on the conductor surface such as scratches or water drops. Wet weather conditions often increase corona discharge due to accumulation of raindrops, fog, frost or condensation on the conductor surface which causes surface irregularities which result in small electrical discharges. In addition to noise generation, corona also results in power loss in the transmission line. Therefore, transmission lines are designed to include sufficiently large conductors and smooth-edged hardware, which reduces the potential for corona.

For a planned double-circuit 230-kV transmission line in a 100-foot wide right-of-way, maximum noise levels that would be generated by corona discharge during wet conditions would be 37 dBA at the edge of the ROW (CPUC 2009, p. 4.10-12). The corona noise generated during dry conditions would be less than 25 dBA and would be barely audible (SLO County 2011).

The nearest residential receivers to any internal gen-tie line would be well beyond the edge of the right-of-way and thus would not be subject to corona noise from within the WSP plan area. Therefore, the potential noise impact due to corona discharge within WSP plan area would be *less than significant*.

WSP Gen-Tie Corridors

The nearest dwellings to the WSP gen-tie corridors include 2 existing residences along the south side of Nevada Avenue and 8 dwellings along the south side of Jayne Avenue. These dwellings would be located 125 to 180 feet from the nearest edge of the gen-tie corridor. At these distances, the noise from corona discharge would not be audible by the nearest receivers even under wet conditions. All other residential receptors would be located farther away from the transmission lines. Therefore, the potential noise impact due to corona discharge along the WSP gen-tie corridors would be *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***Westlands Transmission Corridors*. No mitigation is required.**

Impact NOI-8. Substation and Switching Station Noise

Westlands Solar Park*. Equipment noise from operation of new substations and switching stations within the WSP plan area would result in small increases in noise levels in the vicinity. *(Less-than-Significant Impact)

WSP Gen-Tie Corridors*. Equipment noise from operation of substation upgrades associated with the gen-tie lines would result in small increases in noise levels in the vicinity. *(Less-than-Significant Impact)

This impact analysis addresses significance criteria 'a' and 'c' above.

Westlands Solar Park

Upon buildout, the WSP plan area would include several substations for stepping up voltage levels for delivery to the state grid. (It is possible that two switching stations may also be constructed if the point of interconnection to the state grid is ultimately planned for the WSP plan area instead of the Gates Substation as currently planned.) Sources of audible noise within a substation include equipment such as transformers, reactors, voltage regulators, circuit breakers and other intermittent noise generators. (The noise generating elements of switching stations are similar to substations.) Among these sources, transformers, reactors, and circuit breakers have the greatest potential for producing noise. The broadband sound from fans, pumps and coolers has the same character as ambient sound and tends to blend with the ambient noise. Reactors are similar to transformers in terms of audible noise, and would generate noise levels of about 40 dBA L_{eq} at 200 feet (SLO County 2011, p. AP. 4-114). The highest noise levels would be produced by circuit breakers, which would occur infrequently when breakers are thrown to protect the system during an electrical fault due to line overloads. The resultant noise would be impulsive in character, being loud and short in duration. The maximum impulse noise level from the breakers would be approximately 105 dBA L_{max} at 50 feet (SLO County 2011, p. AP. 4-114). This maximum noise would decrease at the rate of 6 dBA per doubling of distance from the point source, so

that the noise would be reduced to 75 dBA L_{max} at a distance of 1,600 feet from the source, and further reduced to 70 dBA L_{max} at about 3,000 feet (just over ½ mile). While the locations of the substations within the WSP plan area have not been determined, it is anticipated that they would be located at least ½ mile from the nearest residential receivers. The two switching stations would be located at the eastern ends of the WSP gen-tie corridors which are at least 2.0 miles from the nearest residential receivers. Therefore, maximum noise levels generated by the substations and switching stations would be less than the Kings County daytime standard of 75 dBA L_{max}, and would also meet the nighttime standard of 70 dBA L_{max}, at the nearest residential receivers.

In adjacent Fresno County to the west, the nearest residential receivers would be the dwellings in the western portion of the Shannon Ranch, located approximately 2.7 miles south of the nearest potential switching station location within the WSP plan area. At this distance, the maximum noise level would be reduced to 55 dBA L_{max}, well within the Fresno County daytime noise standard of 70 dBA L_{max}, and also the nighttime standard of 65 dBA L_{max}, for residential receivers. Since maximum noise levels generated by the substations and switching stations within the WSP plan area would not exceed any applicable noise limits for residential receivers in Kings County or Fresno County, the noise resulting from substation operations within the WSP plan area would represent a *less-than-significant* impact.

WSP Gen-Tie Corridors

The WSP gen-tie corridors would terminate at the Gates Substation in Fresno County. It is likely that additional electrical equipment would be installed to accommodate the additional incoming lines. This would include equipment such as transformers, reactors, voltage regulators, circuit breakers and other intermittent noise generators. This additional equipment would increase overall noise levels at the Gates Substation. The nearest residential receivers are located 2 miles to the northeast, where the loudest substation noise (from circuit breakers being thrown) would be 59 dBA L_{max}, which would be below Fresno County's daytime noise standard of 70 dBA L_{max}, and also below the nighttime standard of 65 dBA L_{max}, at the nearest residential receivers. Therefore, the potential noise impacts resulting from modifications to the Gates Substation would be *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

Decommissioning Noise

Impact NOI-9. Noise from Decommissioning of Solar Facilities

***Westlands Solar Park*. Noise levels would be temporarily elevated during deconstruction activities associated with solar facility decommissioning within the WSP plan area. (*Less-than-Significant Impact*)**

***WSP Gen-Tie Corridors*. Decommissioning of WSP gen-tie facilities is not anticipated; therefore, no noise impacts would occur. (*No Impact*)**

This impact analysis addresses significance criteria 'a' and 'd' above.

Westlands Solar Park

As discussed in Chapter *2. Project Description*, the level of activity during decommissioning (or deconstruction) of solar facilities within WSP is expected to be similar to the activity level during construction. Thus, the number transport vehicle trips required for off-haul of decommissioned materials is expected to be similar to the number of trips required to haul the materials to the site during construction. The number of workers required on-site is also expected to be about the same, while the use of construction equipment would be similar or a little less. For purposes of analysis, it is assumed that traffic generated during decommissioning would be the same as the worst-case traffic generated during construction, and that noise levels would also be the same as shown in Tables NOI-5 and NOI-6 for on-site construction noise and off-site traffic noise respectively. As discussed under Impact NOI-1, construction noise would result in a less-than-significant impact when construction activity occurs in proximity to the existing dwellings at Shannon Ranch and Stone Land Company Ranch. Therefore, it is expected that noise impacts at the nearest receptor locations resulting from decommissioning activities would be *less than significant*.

Traffic noise generated by workers and trucks during decommissioning would be low relative to ambient noise, as it would be for construction-related traffic noise discussed under Impact NOI-4. When the first solar facilities within WSP begin decommissioning in 25 years, the worst-case noise levels would be similar to those indicated in Table NOI-8 under far-term conditions with full SGF operations and construction of final solar projects in WSP. As discussed under Impact NOI-4, the traffic noise levels would not violate the applicable noise requirements and thus the noise impact from off-site traffic generation would be less than significant. The noise impacts from traffic anticipated during decommissioning would also be *less than significant*.

In summary, the on-site noise impacts to the nearby residential receivers during decommissioning would *less than significant*, and off-site noise impacts due to traffic generated by decommissioning activities would also be *less than significant*.

WSP Gen-Tie Corridors

Unlike solar generating facilities, there are no plans for decommissioning the planned gen-tie lines and towers. Therefore, *no noise impacts* are anticipated in this respect.

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

Aircraft Noise

Impact NOI-10. Noise from Flight Operations Associated with Nearby Airports

***Westlands Solar Park*. The workers within the WSP plan area would not be exposed to excessive noise levels from flight operations associated with public or public use airports, NAS Lemoore, or private airstrips in the vicinity. (*Less-than- Significant Impact*)**

***WSP Gen-Tie Corridors*. The workers on the gen-tie projects would not be exposed to excessive noise levels from flight operations associated with public or public use airports, NAS Lemoore, or private airstrips in the vicinity. (*No Impact*)**

This impact analysis addresses significance criteria 'e' and 'f' above.

Westlands Solar Park

Public Airports

The WSP plan area is not located within an airport land use plan or within two miles of a public airport or public use airport. The nearest public or public use airports include the Hanford and Coalinga municipal airports, and the Harris Ranch Airport, all of which are located 15 miles or more from the WSP plan area. Therefore, workers within the WSP plan area would not be exposed to excessive noise levels from flight operations associated with public or public use airports, and the impact would be *less than significant*.

NAS Lemoore

The majority of the WSP plan area is included in the study area for the Naval Air Station (NAS) Lemoore Joint Land Use Study (JLUSPC 2011). The northern portions of the WSP plan area are within the NASL flight pattern where ground noise level contours exceed 65 dBA CNEL and can exceed 70 dBA in certain areas. Solar facilities are not considered noise-sensitive land uses, and even the O&M facilities (where staff would be present) are considered compatible with exterior noise levels up to 76 dBA CNEL. Interior noise levels within O&M buildings would be 20 dBA lower, which is considered acceptable for commercial and industrial operations. Therefore, military overflights associated with NAS Lemoore would not expose workers within the WSP plan area to excessive noise levels, and the impact would be *less than significant*.

Private Airstrips

There are no private airstrips within the WSP plan area, and there are five private airstrips within 4 miles of the outside boundaries of WSP. Four of these airstrips are for personal or corporate use of ranch owners, and one of these airstrips is operated by a crop dusting company. The aircraft operations at the private airstrips would be relatively infrequent, and the crop dusting flights may occasionally traverse the WSP plan area en route to their destinations. While private aircraft may occasionally pass over the WSP plan area and result in increased noise levels on the ground, the WSP solar facilities would not be sensitive to noise from these occasional overflights. Therefore, workers within the WSP plan area would not be exposed to excessive noise levels from flight operations associated with private airstrips, and the impact would be *less than significant*.

In summary, the workers within the WSP plan area would not be exposed to excessive noise levels from flight operations associated with public or public use airports, NAS Lemoore, or private airstrips in the vicinity. Therefore, the potential noise impacts from flight operations to workers within the WSP plan area would be *less than significant*.

WSP Gen-Tie Corridors

Public Airports

The nearest municipal airports to the WSP gen-tie corridors include the Hanford and Coalinga airports, all of which are located between 6 and 20 miles from the transmission corridors at their nearest points. The flight operations associated with these airports are too far from the transmission corridors to result in excessive noise levels to workers on the transmission lines. Therefore, workers on the WSP gen-tie projects would not be exposed to excessive noise levels from flight operations associated with public or public use airports, and the impact would be *less than significant*.

NAS Lemoore

Portions of the WSP to Gates gen-tie corridors are within the NASL flight pattern where ground noise level contours exceed 65 dBA CNEL and can exceed 70 dBA CNEL in small areas. Transmission projects are not noise sensitive and are considered compatible with exterior noise levels up to 76 dBA CNEL. Therefore, military overflights associated with NAS Lemoore would not expose workers on the WSP gen-tie projects to excessive noise levels, and the impact would be *less than significant*.

Private Airstrips

There are five private airstrips within about 5 miles of the WSP gen-tie corridors. The nearest airstrips are at Shannon Ranch at Avenal Cutoff Road and Gale Avenue, where the north end of the runway is located just over one mile south of the WSP-North to Gates gen-tie corridor; and at Stone Land Company Ranch on Nevada Avenue, where the north end of the runway is about 0.3 miles from the WSP-South to Gates gen-tie corridor. Occasional takeoffs and landings at these private airstrips would generate noise at the nearby portions of these gen-tie corridors. However, the noise levels from small private aircraft would not be excessive, and transmission workers would be present in the vicinity relatively briefly during gen-tie line construction, and rarely during inspection and maintenance activities once the gen-tie lines are completed. These workers would not be exposed to excessive noise levels from flight operations associated with private airstrips. The remaining 3 airstrips are located from

3 to 5 miles from the gen-tie corridors. At these distances, flight operations associated with the airstrips would not result in excessive noise levels at the nearest segments of the transmission corridors. Therefore, workers on the WSP gen-tie projects would not be exposed to excessive noise levels from flight operations associated with private airstrips, and the impact would be *less than significant*.

In summary, the workers on the WSP gen-tie projects would not be exposed to excessive noise levels from flight operations associated with public or public use airports, NAS Lemoore, or private airstrips in the vicinity. Therefore, the potential noise impacts from flight operations to workers within the WSP gen-tie corridors would be *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

Cumulative Noise Impacts

Impact NOI-11. Cumulative Noise Impacts

***Westlands Solar Park*. The noise generated by WSP solar projects, along with noise from other cumulative projects, would combine to result in a small increase in noise levels in the area. (*Less-than-Significant Cumulative Impact*)**

***WSP Gen-Tie Corridors*. The noise generated by WSP gen-tie projects, along with noise from other cumulative projects, would combine to result in a small increase in noise levels in the area. (*Less-than-Significant Cumulative Impact*)**

Geographic Scope of Cumulative Analysis

Noise levels generated by construction and operational activity within the WSP plan area and within the WSP gen-tie corridors would drop off to acceptable levels within several hundred feet of the noise sources. The construction and operation of the WSP solar facilities would also generate traffic which would increase noise levels along roadways serving the WSP solar projects. Due to the differences in character and distribution between these two noise source categories, the noise from on-site sources is treated separately from noise produced by project-generated traffic along off-site roadways for purposes of this cumulative analysis.

The construction and operational noise generated by the WSP solar projects would be confined to the adjacent and nearby properties. To take into account the potential additive effects of noise sources at the WSP Plan area when combined with on-site noise sources at other cumulative projects in the vicinity, this cumulative analysis considers the potential noise sources from cumulative projects within ¼ mile of the WSP plan area.

Noise level increases resulting from WSP-generated traffic would occur along the main roadways serving the plan area. The roadside areas subject to noise increases would extend out from the plan area beyond the immediate project vicinity. Therefore, the geographic scope of impacts due to project traffic noise would be different than the geographic scope of noise impacts due to on-site construction and operations which would be limited to the area immediately surrounding the plan area. The project contributions to cumulative traffic noise would diminish with distance from the plan area, as project traffic would radiate from the site and disperse throughout the surrounding roadway network. Project traffic noise would also be confined to the immediate vicinity of the roadways affected.

Westlands Solar Park

Near Term

Under near-term conditions, there are four pending, approved, and completed projects (or groups of projects) within a ¼ mile radius of the WSP's outside boundaries. (Note: The Westside Solar project and Westlands Aquamarine solar project, shown in Figure PD-9, are located within the WSP plan area. However, since the impacts associated with these projects are addressed in the WSP impact analysis, they are not included again in the list of cumulative projects below.) All four of these projects comprise completed solar PV developments. These solar projects are listed below and described in Section *2.5. Completed, Approved and Pending Projects/ Introduction to Cumulative Impact Analysis*. Their locations are shown in Figure PD-9.

- Mustang/Orion/Kent South
- American Kings
- Mustang 2
- Kettleman

As noted above, the nearest two of the cumulative projects (Mustang/Orion/Kent South and Kettleman Land) have been constructed, and two others (Mustang 2 and American Kings) are pending approval. For purposes of this analysis, it is assumed that peak construction period of the latter two projects would occur at the same time as the peak construction period assumed for the WSP solar development.

In the far term, it is assumed that development would occur in accordance with the 2035 Kings County General Plan land uses and transportation network.

Near-Term Cumulative Noise from On-Site Sources

In general, the combined noise from project construction and operational activities at the cumulative project sites would result in a cumulative noise impact if the combined noise levels from the cumulative projects exceeded the applicable County noise standards at the location of a noise-sensitive receiver. As discussed previously, the nearest sensitive receivers to the WSP plan area are the existing residences at the Shannon Ranch Complex at Avenal Cutoff Road and Lincoln/Gale Avenue, and at the Stone Land Company Ranch on Nevada Avenue, 1.4 miles east of Avenal Cutoff Road.

The American Kings and Mustang 2 solar projects occupy a combined area of 3,384 acres directly to the northeast and east of the northeast corner of the WSP plan area (see Figure PD-9 in Chapter *2. Project Description*). The nearest sensitive receptors to the American Kings project consist of the schools and base housing within NAS Lemoore on the north side SR-198, which are 400 feet north of the American Kings

site. The nearest sensitive receptors to the Mustang 2 site are rural residences located about one mile east along 22nd Avenue. The most northerly point in the WSP plan area is 2.5 miles south of the nearest sensitive receptors at NAS Lemoore (i.e., base housing), and about one mile west of the rural residences along 22nd Avenue. Under assumed worst-case conditions, peak construction activity would occur at the north end of the American Kings project (i.e., at 25th Avenue and SR-198), which is approximately 400 feet from the nearest sensitive receivers (base housing) at NAS Lemoore. The peak construction noise level would be approximately 93 dB L_{max} at 50 feet, which would decrease to 75 dBA L_{max} at 400 feet. The noise levels received from the most northerly construction within the Mustang 2 project site located 2 miles away would be 47 dBA L_{max}, which would comprise a negligible portion of the overall noise level at the nearest sensitive receiver at NAS Lemoore under assumed worst-case conditions. The noise levels received from the most northerly construction within the WSP plan area at 2.5 miles away would be 42 dBA L_{max}, which would also comprise a negligible portion of the overall noise level at the nearest sensitive receiver at NAS Lemoore under assumed worst-case conditions. The combined peak construction noise level of 75 dB L_{max} from all 3 cumulative projects at the nearest sensitive receiver at NAS Lemoore would meet the County's 75 dBA L_{max} daytime noise standard for residential receivers. Therefore, the cumulative noise impacts from combined peak on-site construction noise levels generated at the American Kings, Mustang 2, and WSP solar projects under assumed worst-case conditions would be less than significant.

The cumulative projects are located substantial distances from the sensitive residential receivers located adjacent to the WSP plan area. The most westerly point of the Mustang 2 solar project site is located 3.0 miles east of the Shannon Ranch Complex and 6.0 miles northeast of the Stone Land Company Ranch. The most southerly point of the American Kings solar project site is located 3.9 miles northeast of the Shannon Ranch Complex and 7.3 miles northeast of the Stone Land Company Ranch. At these distances, the peak construction noise generated by the adjacent solar projects would not be audible at either of these sensitive receptor locations and would not combine with peak construction noise from WSP solar development to result in a cumulative increase in noise levels at these receiver locations.

Under post-construction conditions, when American Kings, Mustang 2, and the nearby WSP solar projects are operational, the noise levels generated at these solar facilities would be very low, as discussed for the WSP solar operations under Impact NOI-5, and would not be audible at the potentially affected receiver locations. Once the American Kings and Mustang 2 solar projects are operational, portions of the WSP plan area would still be under construction. However, combination of WSP construction noise and operational noise from the other two cumulative projects would be lower than noise levels during concurrent construction of all three solar projects, a condition under which noise impacts would be less than significant, as discussed above. Therefore, noise impacts under this less noisy cumulative scenario would also be less than significant.

In summary, the near-term cumulative noise impacts associated with the construction and operation of the WSP solar facilities and the other cumulative projects would be *less than significant*.

Near-Term Cumulative Traffic Noise

The cumulative analysis of near-term traffic noise impacts considers the noise generated by near-term cumulative projects, consisting of the solar development in the vicinity of the WSP plan area. These projects were identified based on their potential to contribute traffic to roadways which would also be subject to substantial WSP-generated traffic. The only projects in the WSP vicinity that have the potential to generate significant cumulative traffic are the same projects as identified above for the analysis of on-site noise sources. These consist of the American Kings and the Mustang 2 solar projects. There are no

other pending or approved developments within the general WSP vicinity that have the potential to contribute substantial cumulative traffic volumes to the roadway network utilized by the WSP solar projects during their construction or operational phases.

As discussed above under Impact NOI-3, residential receptors that are potentially subject to WSP-generated traffic noise include the following: Shannon Ranch complex at Avenal Cutoff Road and Gale/Lincoln Avenue; Stone Land Company Ranch located on Nevada Avenue 1.4 miles east of Avenal Cutoff Road; residences on Jayne Avenue, 3.5 miles west of Avenal Cutoff Road; and residences on Gale Avenue, 4.3 miles west of Avenal Cutoff Road. The current ambient noise levels at those receptor locations are shown in Table NOI-9 below.

TABLE NOI-9
NEAR-TERM CUMULATIVE TRAFFIC NOISE LEVELS AT RESIDENTIAL RECEPTOR LOCATIONS

Residential Receiver Location	2015 Baseline Day-Night Average Noise Level at 100 feet from Road C/L (dBA L_{dn})	Noise Level with WSP Peak Near-Term Traffic (dBA L_{dn})	Noise Level Increase due to Peak Near-Term WSP Traffic (dBA L_{dn})	Near-Term Cumulative Traffic Noise Levels (dBA L_{dn})	Near-Term Cumulative Noise Level Increase due to Cumulative Traffic (dBA L_{dn})	Impact Significance Criterion (dBA increase)[1,2]	Significant Cumulative Noise Impact?
Shannon Ranch (w/s Avenal Cutoff Rd. at Lincoln Av.)	73[3]	73.1[4]	0.1 dBA	73.4	0.4 dBA	+1.5 dB	**No**
Stone Land Co. Ranch (1.4 miles east of Avenal Cutoff Rd.)	61[3]	61.7[4]	0.7 dBA	63.9	2.9dBA	+3.0 dBA	**No**
Jayne Avenue (3.5 miles west of Avenal Cutoff Rd.)	68[3]	68.0[4]	0.0 dBA	68.4	0.4 dBA	+1.5 dB	**No**
Gale Avenue (4.3 miles west of Avenal Cutoff Rd.)	59[3]	59.0[4]	0.0 dBA	59.2	0.2 dBA	+5.0 dB	**No**

Footnotes:
[1] Kings County Noise Element 2010, Policy B1.2.1 page N-35.
[2] Fresno Co. 2000 General Plan Update – Health & Safety Element (policy HS-G.7) p. 2-176.
[3] Illingworth & Rodkin, Long-term noise measurements, December 14, 2015 (in Appendix E of this EIR).
[4] Based on I&R's short-term noise measurements and traffic volume increase from WSP projects.
Source: Illingworth & Rodkin 2016

As discussed in Section *3.10.2. Regulatory Context* above, the applicable Kings County noise standard is 65 dBA CNEL (or L_{dn}) for residential uses in agricultural zones that are subject to transportation noise. Kings County Noise Element Policy B1.2.1 also provides that substantial increases in traffic noise levels may also be significant depending on ambient conditions. In particular, the policy provides that for locations where the ambient noise level is under 60 dB L_{dn}, a 5 dBA increase would be significant. Where the ambient noise level is between 60 and 65 dBA L_{dn}, a 3 dBA increase would be significant; and

where the ambient noise level is over 65 dB L_{dn}, a noise increase of 1.5 dB would be significant. These noise impact criteria are also applied by Fresno County. (It is noted that while the Kings County Noise Element transportation noise thresholds are expressed in terms of CNEL, the noise increments that would define a significant noise increase are expressed in L_{dn} in the Noise Element. Since the CNEL and L_{dn} metrics are very similar, they are considered equivalent for purposes of comparing noise level increases with the noise standards in this analysis.) These criteria are also applied below in the analysis of cumulative noise impacts at the receiver locations.

Table NOI-9 shows the noise level increases due to peak WSP construction traffic, and also shows cumulative noise level increases due to WSP construction traffic combined with traffic from other projects in the area. As discussed in Section *3.13. Traffic and Circulation*, the analysis is based on assumed worst-case conditions where the two pending but not yet constructed solar projects nearby (American Kings and Mustang 2) would both be under construction at the same time as peak construction activity occurs within WSP.

Based on near-term cumulative traffic projections from Section 3.13, it was calculated by Illingworth & Rodkin that near-term cumulative noise levels along the affected roadways would increase by 0.2 dBA L_{dn} to 2.9 dBA L_{dn} relative to ambient 2015 conditions at the locations of the potentially affected residential receivers. The resulting noise levels at the affected residential receivers would be less than the applicable noise increase criteria of Kings and Fresno counties, which are also considered to be the thresholds of significance for cumulative traffic noise increases for purposes of this analysis. Therefore, the near-term cumulative noise impacts due to increased traffic on affected roadways would be *less than significant*.

Far Term

Far-Term Cumulative Noise from On-Site Sources

The cumulative noise from on-site sources in the far term would reflect buildout of land uses planned under the 2035 Kings County General Plan and the Fresno County 2000 General Plan. As designated in the Kings County Land Use Map (GP Fig. LU-11), all the lands in the WSP vicinity are planned for agricultural land uses. The nearest areas planned for non-rural development are the Stratford Community Plan area, located 2.0 miles east of the WSP plan area, and the Kettleman City Community Plan area, located 2.0 miles south of the WSP plan area. In Fresno County to the west, the nearest planned development would occur in the City of Huron, located 6.2 miles west of the WSP Plan area. Peak construction and operational noise sources resulting from buildout of these rural communities would not be audible at the sensitive receptors for WSP development. The Shannon Ranch Complex is located 6.9 miles from the Stratford Community Plan area, 11 miles from the Kettleman City Community Plan area, and 7.3 miles from the City of Huron. The Stone Land Company Ranch is located 8.7 miles from the Stratford Community Plan area, 7.9 miles from the Kettleman City Community Plan area, and 7.6 miles from the City of Huron. At these distances, the peak noise generated by development activity within these rural communities would not combine with noise generated by WSP solar development to result in increased cumulative noise levels at any sensitive receptor locations in the far term.

It is possible that currently unknown or unforeseen development could occur on the agriculturally-designated lands in the WSP vicinity. Such development could consist of solar PV facilities or infrastructure improvement projects such as power transmission lines or transportation capacity enhancing projects. Such solar or infrastructure projects could be proposed in proximity to the Shannon Ranch Complex or the Stone Land Company Ranch under far-term conditions. It is also possible, but unlikely, that the peak construction periods of such projects could occur at the same time as nearby development within the WSP

plan area, resulting in potential temporary increases in cumulative noise levels. The analysis of such a scenario is speculative, but in the unlikely event it were to occur, it is reasonable to expect that the noise standards of the Kings County Noise Element and the Fresno County Health and Safety Element, as applicable, would be implemented. This would ensure that noise levels at each project site would be reduced such that potential noise impacts at the sensitive receptor locations would be reduced to less-than-significant levels. The potential for residual, less-than-significant noise levels at potential adjacent projects to combine to result in cumulatively significant noise levels is considered highly unlikely, even under this hypothetical worst-case scenario. Cumulative operational noise levels after construction would be lower than cumulative construction noise levels and therefore would also be less than significant. Therefore, the potential for cumulative noise impacts to occur in association with WSP solar development in the far-term is *less than significant*.

In summary, the far-term cumulative noise impacts associated with the construction and operation of the WSP solar facilities and the other cumulative development that could occur under the Kings County and Fresno County General Plans would be *less than significant*.

Far-Term Cumulative Traffic Noise

The noise standards and significance thresholds applied in the analysis of near-term cumulative traffic noise impacts, above, are also applicable to this analysis of far-term cumulative traffic noise impacts.

The far-term cumulative noise analysis is based on the same assumptions as the far-term traffic analysis discussed in Section *3.13. Traffic and Circulation*. Under the worst-case assumption, WSP buildout would occur in 2030, when it is assumed that traffic volumes projected for General Plan buildout would also occur. Since the WSP solar facilities were not contemplated in the General Plan traffic forecasts, the WSP traffic volumes were added to the 2035 GP traffic volumes. The hypothetical worst-case condition for WSP traffic generation under far-term conditions, presented in Table TRA-2, assumes that all operational traffic from WSP buildout would be included, in addition to construction traffic generated by peak construction activity from two 250 MW solar facilities constructed concurrently within the WSP plan area. It is further assumed that the other currently proposed and approved solar projects in the area would be completed and operational. Thus, the operational traffic generated by these completed projects is included in the cumulative traffic projections upon which the cumulative traffic noise analysis is based. All future non-solar development projects are assumed to be included in the traffic projections for General Plan buildout.

It is possible that additional solar and other development may be proposed within the life of the General Plan that is not reflected in the current Land Use Element; and any such development may generate traffic and noise that is not included in the Circulation Element traffic projections or the Noise Element projections for future noise levels adjacent to the affected roadways. However, the nature and location of such potential development is currently unforeseeable. Any attempt to predict and analyze the potential impacts from currently unknown development patterns would be speculative, and CEQA explicitly requires that EIRs not engage in such speculative analysis.

As shown in Table NOI-10, the combined traffic noise increase from WSP solar facilities and the operation of the other solar projects in the area in 2030 under the assumed worst-case conditions would result in cumulative noise level increases ranging from 0.1 to 1.6 dB L_{dn} at the receptor locations over baseline 2030 conditions.

TABLE NOI-10
2030 CUMULATIVE TRAFFIC NOISE LEVELS AT RESIDENTIAL RECEPTOR LOCATIONS

Residential Receiver Location	2030 Baseline Day-Night Average Noise Level at 100 feet from Road C/L (dBA L_{dn})	Far-Term Noise Level with WSP Peak Operational plus Peak Construction Traffic (dBA L_{dn})	Far-Term Noise Level Increase due to WSP Peak Traffic (dBA L_{dn})	Far-Term Cumulative Noise Level (dBA L_{dn})	Far-Term Cumulative Noise Level Increase from Cumulative Traffic[1] (dBA L_{dn})	Applicable Impact Criterion (dBA increase)[2,3]	Significant Cumulative Noise Impact?
Shannon Ranch (w/s Avenal Cutoff Rd. at Lincoln Av.)	76.2[4]	76.2[5]	0.0 dBA	76.4[5]	0.2 dBA	+1.5 dB	**No**
Stone Land Co. Ranch (1.4 miles east of Avenal Cutoff Rd.)	64.5[4]	64.9[5]	0.4 dBA	66.1[5]	1.6 dBA	+3.0 dBA	**No**
Jayne Avenue (3.5 miles west of Avenal Cutoff Rd.)	71[4]	71[5]	0.0 dBA	71.2[5]	0.2 dBA	+1.5 dB	**No**
Gale Avenue (4.3 miles west of Avenal Cutoff Rd.)	62[4]	62[5]	0.0 dBA	62.1[5]	0.1 dBA	+3.0 dB	**No**

Footnotes:
[1] Includes WSP operational and construction traffic in 2030.
[2] Kings County Noise Element 2010, Policy B1.2.1 page N-35.
[3] Fresno Co. 2000 General Plan Update – Health & Safety Element (policy HS-G.7) p. 2-176.
[4] Illingworth & Rodkin, Short Term and Long term noise measurements, December 14, 2015.
[5] Based on I&R's short-term noise measurement and traffic volume increase.
Source: Illingworth & Rodkin

As shown in Table NOI-10, these noise level increases would be lower than the applicable thresholds that define significant noise level increases in the Kings County Noise Element and the Fresno County Health and Safety Element. Therefore, the worst-case traffic generation from combined construction and operational activities would result in a *less-than-significant* cumulative noise impact under far-term conditions.

WSP Gen-Tie Corridors

As discussed previously in this section, the construction and operation of the planned gen-tie lines would result in increased noise levels within several hundred feet of the gen-tie corridors. Noise levels would drop to below applicable county thresholds at 400 feet for conventional construction. (Although helicopter noise would drop off county threshold levels at 700 feet from the source, it is highly unlikely that two proximate projects would engage in helicopter construction at the same time, so this distance is not applicable to the cumulative analysis.)

Noise from another project nearby could potentially contribute to noise level at the location of a sensitive receiver to noise from the planned gen-tie lines. It would be necessary for such additional noise source to be located within 400 feet of the common sensitive receptor to have a significant additive effect on noise

levels at the receiver location (i.e., with the combined noise sources resulting in an exceedance of an applicable noise standard). To be conservative, the geographic scope of analysis for cumulative noise impacts related to the WSP gen-tie projects is set at 1,000 feet from the gen-tie corridors. Thus, cumulative projects located within 1,000 feet of the planned transmission corridors are considered in this analysis

Near Term

Under near-term conditions, there are two transmission projects and one solar project on lands within 1,000 feet the WSP gen-tie corridors. These projects are listed below and shown in Figure PD-10, and described in Section *2.5. Completed, Approved, and Pending Projects/Introduction to Cumulative Impact Analysis*.

- Gates to Gregg Transmission Project (Central Valley Power Connect)
- Westside Transmission Project (Gates to Dos Amigos/Los Banos Substation)
- EC&R Solar

As discussed previously in this section, the WSP gen-tie projects would generate noise from several sources during construction and operation. During construction, noise would be generated by heavy equipment used in grading and excavation, assembly of the transmission towers, and installation of conductors. In some instances, helicopter construction may be required, which would generate substantial noise. Traffic noise would be generated along local roadways by trucks delivering equipment and materials, and by workers arriving and departing the construction sites. Due to the progressive nature of transmission line construction, the activity levels at a given location would be temporary and short in duration. As discussed under Impact NOI-1, noise from conventional construction activity would not exceed the applicable noise standards at the nearest receiver locations along the WSP gen-tie corridors. While there is some potential that helicopter construction may be employed, with higher noise levels than conventional construction, it is unlikely that any two projects would engage in helicopter construction at the same time. Therefore, cumulative or additive noise from these sources is highly unlikely to occur, and thus they are not considered in this cumulative analysis.

Although the gen-tie projects would generate some traffic during construction from trucks delivering materials and workers traveling to and from the job sites, the overall volumes would be very light and would occur briefly at any given location considering the progressive nature of gen-tie line construction. Operational traffic would consist of utility trucks traveling to tower sites for regular inspection and maintenance activities, which would also result in negligible increases in traffic noise levels along local roadways. Therefore, noise impacts associated with construction and operational traffic generated by the Westlands Solar Park transmission would not be significant.

As discussed above, it is possible that the northern WSP gen-tie project could be built simultaneously with the construction of other planned transmission or solar projects in the vicinity. If so, there is a potential that noise levels at nearby sensitive receptors could increase, as discussed below.

The only potential situation where a WSP gen-tie project would be constructed near one of the other cumulative transmission projects is if the northern WSP gen-tie project were to be constructed at the same time as the adjacent segment of the Gates to Gregg transmission project (Central Valley Power Connect). The northern gen-tie corridor would run parallel to one of the alternative routes for the adjacent CVPC transmission project along its entire 11.5-mile corridor. There are 10 rural residences located between 0.3 and 0.9 miles from the corridor. Given that the nearest residence is located 1,600 feet from the northern

gen-tie corridor, the maximum construction noise levels at this residence would be 60 dBA from the WSP gen-tie project, and 63 dBA with the addition of the CVPC transmission project, if constructed adjacent and concurrently. This worst-case noise level would be well below Fresno County's maximum permissible exterior noise level of 70 dBA during daytime hours of 7 AM to 10 PM.

The northern gen-tie corridor runs adjacent to the EC&R solar project site just east of SR-269. The nearest residential receptors to the EC&R site is located 1,150 feet east on Tractor Avenue. At this distance the maximum construction noise levels at the nearest residences would be 63 dBA from the EC&R project alone. As discussed above, maximum combined construction noise levels from the northern gen-tie project and the Central Valley Power Connect project would be 63 dBA at these same residences. Assuming construction of all three projects occurred simultaneously and at the nearest respective locations to these residential receptors, the combined maximum construction noise levels would be 66 dBA. This worst-case noise level would be well below Fresno County's maximum permissible exterior noise level of 70 dBA during daytime hours of 7 AM to 10 PM.

In addition, construction noise sources are exempt from the Fresno County noise standards, provided the construction activities do not take place before 6 AM or after 9 PM on weekdays, or before 7 AM or after 5 PM on Saturdays or Sundays (see Section *3.10.2. Regulatory Context* above). Therefore, the near-term cumulative noise impact associated with construction of the WSP gen-tie projects would be *less than significant*.

Upon completion of construction, the operational noise sources from the transmission line would include occasional noise from corona discharge and low noise levels associated with maintenance and inspection activities. The noise from these sources would decrease to ambient levels within a short distance of the transmission line. These low noise levels would not combine with other cumulative noise sources to result in substantial increases in noise levels. Therefore, the near-term cumulative noise impacts from operation of the completed WSP gen-tie lines would be *less than significant*.

Far Term

Under far-term conditions in 2030, the planned gen-tie lines would be completed. The noise levels from operation of the gen-tie lines would be very low, as discussed above. The nature and location of future development in the vicinity of the gen-tie corridors in 2030 is unknown. While the General Plans for Kings and Fresno counties indicate a continuation of rural and agricultural development patterns in the vicinity of the transmission corridors, there is a potential for currently unknown solar development or transmission other projects to be developed nearby. Even so, the noise levels from operation of the gen-tie lines would be sufficiently low that even under worst-case conditions where development would occur adjacent to the gen-tie corridors, the noise from the gen-tie lines combined with operational noise from any nearby development would not result in a substantial cumulative increase in noise levels. Therefore, the cumulative noise impacts associated with the operation of the WSP gen-tie projects in the far term would be *less than significant.*

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

REFERENCES/BIBLIOGRAPHY – NOISE

Bies 2003 — Bies, David A., et al. *Engineering Noise Control, Third Edition*. Spon Press, Taylor & Francis Group, 2003. https://books.google.com/books?id=v98PaeB8nQkC&pg=PA242&lpg=PA242&dq=does+oleander+attenuate+noise&source=bl&ots=4n8i7hYY38&sig=q-yPY7VrEcpk74AIsWUYZbUyRjk&hl=en&sa=X&ved=0ahUKEwiJpd_jvdzUAhVX_WMKHbi6AMQQ6AEIRTAF#v=onepage&q=does%20oleander%20attenuate%20noise&f=false

CPUC 2009 — California Public Utilities Commission (CPUC). 2009. *Draft Environmental Impact Report – Southern California Edison's San Joaquin Cross Valley Loop 220 KV Transmission Line Project*. CPUC A.08-05-039. June 2009. http://www.cpuc.ca.gov/Environment/info/esa/sjxvl/deir_toc.html

Fresno County 2000 — County of Fresno. 2000. *Fresno County 2000 General Plan – Health and Safety Element*. October. http://www2.co.fresno.ca.us/4510/4360/General_Plan/GP_Final_policy_doc/Health%20Element_rj.pdf

Fresno County 2017a — County of Fresno. 2017. *Fresno County Ordinance Code.* As amended through April 20, 2017. https://www.municode.com/library/ca/fresno_county/codes/code_of_ordinances

I&R 2017 — Illingworth & Rodkin. 2017. *Noise Measurement Tables and Graphs–Westlands Solar Park and Planned Transmission Corridors*. May. (Contained in Appendix E of this EIR.)

JLUSPC 2011 — Naval Air Station Lemoore Joint Land Use Study Policy Committee. 2011. *NAS Lemoore Joint Land Use Study – Final Release*. August 30. http://www.kingscog.org/index.asp?SEC=1E7B4327-327C-4971-85B4-05AF6F18D22A&Type=B_LIST

Kings County 2009d — County of Kings. 2009. *Final EIR – 2035 Kings County General Plan Update*. October. http://www.countyofkings.com/home/showdocument?id=5897

Kings County 2010 — County of Kings. 2010. *2035 Kings County General Plan*. Adopted January 26. http://www.countyofkings.com/departments/community-development-agency/information/2035-general-plan

Kings County 2016 — County of Kings. 2016. *Kings County Code of Ordinances, as amended through October 4*. http://www.municode.com/library/CA/Kings_County

SLO County 2010 — San Luis Obispo County. 2011. Topaz Solar Farm – Draft EIR. October. Appendix 14 – Noise Background Information. http://www.sloplanning.org/EIRs/topaz/FEIR/V1Apps/App14-ALL-CD.pdf

SLO County 2011 — San Luis Obispo County. 2011. *California Valley Solar Ranch EIR; Appendix 4 – Transmission Upgrades to PG&E Solar-Midway 230 kV Transmission Line*. January 2011. http://www.sloplanning.org/EIRs/CaliforniaValleySolarRanch/feir/apps/Ap04_Transmission_Upgrades_Solar-Midway.pdf

USBLM 2001 — US Bureau of Land Management (BLM). 2001. *Falcon to Gonder 345 kV Transmission Project Final EIS*. December 2001. http://www.blm.gov/nv/st/en/fo/battle_mountain_field/blm_information/national_environmental/falcon_to_gonder_345.html

USBLM 2013 — U.S. Bureau of Land Management (BLM). 2013. *Final Environmental Impact Report for the Gateway West Transmission*. April 2013. http://www.wy.blm.gov/nepa/cfodocs/gateway_west/

USDOT 2006 — U.S. Department of Transportation, Federal Transit Administration. 2006. *Transit Noise and Vibration Impact Assessment, Office of Planning and Environment, May 2006* (FTA-VA-9-1003-06). http://www.fta.dot.gov/documents/FTA_Noise_and_Vibration_Manual.pdf

3.11. PALEONTOLOGICAL RESOURCES

This section was prepared based on a paleontological resource assessment report prepared by Applied EarthWorks in June 2017, which is contained in Appendix E of this EIR.

3.11.1. ENVIRONMENTAL SETTING

Introduction

Definition of Paleontological Resources

Paleontological resources are the evidence of once-living organisms as preserved in the rock record. They include both the fossilized remains of ancient plants and animals and the traces thereof (trackways, imprints, burrows, etc.). In general, fossils are considered to be greater than 5,000 years old (older than Middle Holocene) and are typically preserved in sedimentary rocks. Although rare, fossils can also be preserved in volcanic rocks and low-grade metamorphic rocks formed under certain conditions.

Significant paleontological resources are defined as "identifiable" vertebrate fossils, uncommon invertebrate, plant, and trace fossils. The data provided by fossils are scientifically important because they increase understanding of evolutionary relationships, provide insight into the development of and interaction between biological communities, increase knowledge of the physical history of the earth, the distribution of mineral resources, dynamics of earth processes, and past climatic changes.

Regional Geology

The Westlands Solar Park and the WSP Gen-Tie Corridors are located in the San Joaquin Valley within the Great Valley geomorphic province of California. The Great Valley is roughly 400 miles long and 50 miles wide and was covered by marine waters as far back as the Jurassic and into the Paleogene. Deposition into the Great Valley began during the Late Jurassic as the paleo-Sierra Nevada began to rise and deliver eroded sediments to the lowlands. During the late Mesozoic and much of the Cenozoic, the actively subsiding region persisted as a submerged lowland basin known as the Great Valley Sea. By the Pliocene, most of the marine waters in the Great Valley were drained coincident with the uplift of the Coast Ranges above sea level. Subsequently, during the Quaternary period, extensive deposits of terrestrial material, including alluvial fan, fluvial, basin, and lacustrine sediments, were deposited in the Great Valley during continued uplift and erosion of the Sierra Nevada, Temblor and Coast Ranges.

Westlands Solar Park and WSP Gen-Tie Corridors

Geologic and Paleontological Setting

The WSP plan area is underlain entirely by Quaternary age deposits, including unnamed alluvial fan (Qf), basin (Qc), fluvial (Qb), and lacustrine deposits (Ql). These geologic units are described below and

generally depicted in Figure GEO-2. Detailed descriptions and mapping of the geologic units are contained in the *Paleontological Resource Assessment for the Westlands Solar Park*, in Appendix E of this EIR.

Tulare Lake Lacustrine Deposits (Ql)

Quaternary lacustrine deposits (Ql) of Pleistocene to Holocene age, attributed to former Tulare Lake, are mapped along the southeastern to eastern margin of the Project area. The Tulare Lake deposits underlie a large shallow depression in southeastern Kings County, which extends into neighboring Tulare and Kern Counties. Former Tulare Lake formed in response to climatic changes during Pleistocene glaciation, and later evolved into a seasonal playa during the warmer Holocene.

Pleistocene age sedimentary deposits have yielded significant vertebrate fossil localities throughout the Central Valley. Fine-grained lacustrine sediments, such as the Tulare Lake deposits, have an especially high potential for the preservation of fossilized remains. The Pleistocene Tulare Lake deposits from Kings County have yielded specimens of mammoth, bison, ground sloth, turtle, and other unspecified mammals. A particularly important site along former Tulare Lake is the Witt Site near Kettleman City, which has yielded over 1,500 Pleistocene age vertebrate fossil specimens, including taxa of bison, horse, mammoth, ground sloth, wolf, badger, rodent, turtle, and fish.

Quaternary Alluvium (Qf, Qb)

Quaternary alluvial fan (Qf) and basin deposits (Qb) of Holocene to latest Pleistocene age underlie the majority of the Project area. The Quaternary alluvial fan deposits are composed of coarse- to fine-grained alluvial sediments primarily derived from erosion of volcanic, plutonic, and metamorphic rocks of the Coast Ranges. The Quaternary basin deposits are derived from Sierran and Coast Ranges alluvium. The Coast Ranges alluvium was deposited as a system of coalescing alluvial fans and terrace deposits consisting of locally variable compositions of silt, sand, gravel, and larger clasts. Holocene deposits are generally considered too young to contain fossilized remains, but may shallowly overlie older Pleistocene deposits that have the potential to yield paleontological resources.

Quaternary Older Alluvium (Qc)

Quaternary alluvial fan and fluvial deposits of Middle to Late Pleistocene age (Qc) are exposed in a very small area (less than 5 acres) at the southern tip of the plan area. These Pleistocene deposits consist of unconsolidated coarse to fine sand and silt with abundant pebbles and cobbles, which drained from the Coast Ranges during the Quaternary period. The Pleistocene age sediments typically display well-developed soil and dissection by channels that are partially filled with Holocene age alluvium. The total thickness of the Pleistocene deposits varies locally, but is up to 150 feet thick in the vicinity of the proposed Project area. Quaternary alluvial deposits of Pleistocene age have yielded significant vertebrate fossil localities throughout Kings County, especially within the fine-grained lacustrine sediments of the Tulare Lake deposits. Pleistocene age alluvial sediments in Kings County have preserved a characteristic Ice Age vertebrate fauna of large land mammals, including specimens of bison, camel, mammoth, horse, wolf, sloth, and gopher. Further north, during excavations near Tranquility, California, 149 vertebrate localities were recorded, which yielded over 100 specimens of mammal, bird, reptile, and fish.

Fossil Records

Based on a museum records of the Natural History Museum of Los Angeles County (LACM), the University of California Museum of Paleontology (UCMP), and the Paleobiology Database (PDBD), there are no previously recorded vertebrate fossil localities directly within the WSP boundaries. Six localities with fossil records have been identified in the region within similar Pleistocene age sedimentary deposits. These include the following localities as identified by record number: 1) UCMP V82055 and PBDB 93249 (Witt Site), located near Kettleman City approximately 5 miles south along the southwest shoreline of former Tulare Lake, yielded at least 1,632 vertebrate specimens including bison, horse, turtle, mammoth, ground sloth, camel, wolf, badger, gopher, ungulate, and fish; 2) UCMP V69205, located at an unspecified site in Tulare Lake, yielded horse, bison, ground sloth, turtle, and mammoth; 3) UCMP V75041, located at an unspecified site in western Tulare Lake, yielded a mammoth specimen; 4) LACM 1156, located approximately 45 miles east-southeast of the WSP plan area, just north of city of Delano, yielded a fossil specimen of horse from younger Quaternary lacustrine deposits; 5) LACM 6701, located approximately 65 miles southeast of the WSP plan area near White River, yielded fossil specimen of mammoth, and; 6) LACM 4087, located approximately 50 miles southeast of the WSP plan area east of Highway 65 near Terra Bella, also yielded fossil specimen of mammoth.

Potential for Paleontological Resources to Occur within the WSP Plan Area and Gen-Tie Corridors

Based on the literature review and museum records search results, the geologic units underlying the WSP plan area have a paleontological resource potential (sensitivity) ranging from low to high, as determined in accordance with the Society of Vertebrate Paleontology guidelines. The Quaternary older alluvial (Qc)(located at the southern tip of the WSP plan area) and former Tulare Lake deposits (Ql)(located along the eastern margins of the plan area) are considered to have a high paleontological resource potential because they have proven to yield vertebrate fossils near the WSP plan area and throughout California. Holocene-age alluvial and basin deposits (Qf, Qb)(found in the majority of the WSP plan area) are determined to have a low paleontological resource potential, increasing with depth, because they are generally too young or too coarse to preserve significant fossilized; however, younger alluvium may overlie the older sensitive geologic deposits at depth. The areas with high potential for paleontological resources are located along the eastern boundary of the WSP plan area, mainly between Laurel and Nevada Avenues, and encompass approximately 2,400 acres. The remaining 18,538 acres if the WSP plan area have a low potential for paleontological resources. (Detailed mapping of paleontological sensitivity of the WSP plan area is contained in the *Paleontological Resource Assessment for the Westlands Solar Park*, in Appendix E of this EIR).

The WSP gen-tie corridors are entirely underlain by Holocene-age alluvial and basin deposits (Qf, Qb)(as is the majority of the WSP plan area), which are determined to have a low paleontological resource potential, increasing with depth, because they are generally too young or too coarse to preserve significant fossilized; however, younger alluvium may overlie the older sensitive geologic deposits at depth. The gen-tie corridors, including the WSP-North to Gates Gen-Tie, and the WSP-South to Gates Gen-Tie, have a consistently low potential for paleontological resources throughout their lengths. (Detailed mapping of paleontological sensitivity is contained in the *Paleontological Resource Assessment for the Westlands Transmission Corridors*, in Appendix E of this EIR).

3.10.2. REGULATORY CONTEXT

State

California Public Resources Code (PRC)

California Public Resources Code (PRC) §5097.5 states: "[a] person shall not knowingly and willfully excavate upon, or remove, destroy, or deface any…vertebrate paleontological site or…paleontological…feature, situated on public lands, except with the express permission of the public agency having jurisdiction over the lands."

Local

County of Kings

Kings County has no policies or regulations that specifically address paleontological resources.

County of Fresno

The following Fresno County General Plan policy addresses paleontological resources:

Open Space and Conservation Element

Policy OS-J.44 The County shall require that discretionary development projects, as part of any required CEQA review, identify and protect important historical, archeological, paleontological, and cultural sites and their contributing environment from damage, destruction, and abuse to the maximum extent feasible. Project-level mitigation shall include accurate site surveys, consideration of project alternatives to preserve archeological and historic resources, and provision for resource recovery and preservation when displacement is unavoidable.

Professional Paleontological Standards

The Society of Vertebrate Paleontology (SVP), a national scientific organization of professional vertebrate paleontologists, has established "Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources." These guidelines establish detailed protocols for the assessment of the paleontological resource potential (i.e., "sensitivity") of a project area and outline measures to follow in order to mitigate adverse impacts to known or unknown fossil resources during project development. Absent specific agency guidelines, most professional paleontologists adhere to the SVP assessment, mitigation, and monitoring requirements set forth in the SVP standard procedures.

3.11.3. ENVIRONMENTAL IMPACT ANALYSIS

SIGNIFICANCE CRITERIA

Based on the State CEQA Guidelines, Appendix G, the project would be considered to have a significant impact upon paleontological resources if it would:

a. Directly or indirectly destroy a unique paleontological resource or site or unique geological feature. (Impact PALEO-1)

IMPACTS AND MITIGATION

Impact PALEO-1. Loss of Paleontological Resources

***Westlands Solar Park*. The WSP plan area includes approximately 2,100 acres that are underlain by geologic units that have a high potential for paleontological resources. The remainder of the WSP plan area is underlain by materials with low sensitivity for paleontological resources at the surface, but with increasing sensitivity toward the older alluvial deposits beneath. The construction of solar generating facilities on these lands could potentially result in the destruction of paleontological resources. (*Less-than-Significant Impact with Mitigation*)**

***WSP Gen-Tie Corridors*. The WSP gen-tie corridors are entirely underlain by surface deposits that have a low potential for paleontological resources; however, the surface units may overlie older geologic units that have a high potential for paleontological resources. The construction of the gen-tie projects could potentially result in the destruction of paleontological resources. (*Less-than-Significant Impact with Mitigation*)**

This impact analysis addresses significance criterion 'a' above.

Westlands Solar Park

As discussed in Section *3.11.1. Environmental Setting*, the Quaternary older alluvial (Qc) and former Tulare Lake deposits (Ql) located at the eastern and southeastern margins of the WSP plan area are considered to have a high paleontological resource potential because they have proven to yield vertebrate fossils near the WSP plan area and throughout California. Holocene-age alluvial and basin deposits (Qf, Qb) that underlie the majority of the WSP plan area are determined to have a low to high paleontological resource potential, with sensitivity increasing with depth. The surface material is generally too young or too coarse to preserve significant fossilized remains; however, younger alluvium may overlie the older sensitive geologic deposits at depth. The construction of solar facilities on lands with high paleontological sensitivity could result in the destruction of paleontological resources, which

would represent a *significant impact*. With implementation of Mitigation Measure PALEO-1 below, the impact would be reduced to *less than significant*.

WSP Gen-Tie Corridors

As discussed in Section *3.11.1. Environmental Setting*, the Holocene alluvial (Qf) and basin Qb) deposits that occur along the gen-tie corridors are determined to have a low to high paleontological resource potential, with sensitivity increasing with depth. The surface material is generally too young or too coarse to preserve significant fossilized remains; however, younger alluvium may overlie older sensitive geologic deposits at depth. The construction of transmission facilities on lands with high paleontological sensitivity could result in the destruction of paleontological resources, which would represent a *significant impact*. With implementation of Mitigation Measure PALEO-1 below, the impact would be reduced to *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. Implement MM PALEO-1.**

***WSP Gen-Tie Corridors*. Implement MM PALEO-1.**

MM PALEO-1 Protection of Paleontological Resources. In order to reduce the potential impacts to paleontological resources to less-than-significant levels, the following mitigation measures shall be implemented in conjunction with all ground disturbance and construction work.

a. Workers Environmental Awareness Training. Prior to any ground-disturbing activities, all field personnel shall receive a worker's environmental awareness training module on paleontological resources. The training shall provide a description of the fossil resources that may be encountered in the project area, outline steps to follow in the event that a fossil discovery is made, and provide contact information for the Project Paleontologist and on-site monitor(s). The training shall be developed by the Project Paleontologist and may be conducted concurrent with other environmental training (e.g., cultural and natural resources awareness training, safety training, etc.).

b. Prepare Paleontological Resource Management Plan (RPMP). Prior to the commencement of ground-disturbing activities, a qualified and professional paleontologist shall be retained to prepare and implement a PRMP for the project. The PRMP shall describe mitigation recommendations in detail, including field reconnaissance methodology; paleontological monitoring procedures; communication protocols to be followed in the event that an unanticipated fossil discovery is made during project development; and preparation, curation, and reporting requirements. The PRMP shall include the mitigation procedures described below.

c. Paleontological Reconnaissance Survey. A qualified paleontologist shall be retained to conduct a field reconnaissance survey of the project area prior to any ground-disturbing activities. The purpose of the field survey will be to inspect the ground surface visually for exposed fossils or traces thereof and to further evaluate geologic exposures for their potential to contain preserved fossil material at the subsurface. The field survey shall be limited to project areas underlain by geologic units with a high paleontological sensitivity (e.g., Quaternary older alluvium [Qc] and lacustrine deposits [Ql]). Project areas underlain by geologic units with low sensitivity shall not be subject to the survey. Particular attention shall be paid to rock outcrops, both inside and in the vicinity of the project area, and any areas where geologic sediments are well exposed. Areas determined to be heavily disturbed or otherwise obscured by heavy vegetation, agriculture, or buildings, etc., will not require a ground reconnaissance survey and may be subject to a windshield survey.

d. Document All Finds. All fossil occurrences observed during the course of fieldwork, significant or not, shall be adequately documented and recorded at the time of discovery. The data collected for each fossil occurrence shall include, at minimum, the following information: Universal Transverse Mercator (UTM) coordinates, approximate elevation, description of taxa, lithologic description, and stratigraphic context (if known). In addition, each locality shall be photographically documented with a digital camera. If feasible, with prior consent of the landowner(s), all significant or potentially significant fossils shall be collected at the time they are observed in the field. If left exposed to the elements, fossil materials are subject to erosion and weathering. If the fossil discovery is too large to collect during the survey (e.g., a mammoth skeleton or bone bed) and requires a large-scale salvage effort, then it will be documented and a recovery strategy will be devised pursuant to Society of Vertebrate Paleontology (2010) guidelines.

e. Conduct Paleontological Monitoring. Monitoring entails the visual inspection of excavated or graded areas and trench sidewalls for evidence of fossils. Full-time monitoring shall be required during ground-disturbing activities in the portions of any project that are underlain by geologic units with high sensitivity for paleontological resources (e.g., Quaternary older alluvium [Qc]) and lacustrine deposits [Ql]). In addition, spot checking may also occur at the discretion of the Project Paleontologist in areas underlain by younger Quaternary alluvium deposits (e.g., Qf, Qb), in order to determine if underlying sensitive geologic units are being impacted by construction, and at what depth.

In the event that a paleontological resource is discovered, the monitor shall have the authority to divert the construction equipment around the find temporarily until it is assessed for scientific significance and collected. Monitoring efforts can be reduced or eliminated at the discretion of the Project Paleontologist if no fossil resources are encountered after 50 percent of the excavations are completed.

Monitoring is largely a visual inspection of sediments; therefore, the most likely fossils to be observed will be macrofossils of vertebrates (bones, teeth, tusk) or invertebrates (shells). At the discretion of the Project Paleontologist, the monitor shall periodically screen sediments to check for the presence of microfossils that can be seen with the aid of a hand lens (i.e., microvertebrates). Should microvertebrate fossils be encountered during the screening process, then bulk matrix samples will be taken for processing off site. For each fossiliferous horizon or paleosol, a standard sample (4.0 cubic yards or 6,000 pounds) shall be collected for subsequent wet screening per Society of Vertebrate Paleontology (2010) guidelines.

f. <u>Procedures for Fossil Preparation, Curation, and Reporting</u>. Upon completion of fieldwork, all significant fossils collected shall be prepared in a properly equipped paleontology laboratory to a point ready for curation. Preparation shall include the careful removal of excess matrix from fossil materials and stabilizing and repairing specimens, as necessary. Following laboratory work, all fossil specimens shall be identified to the lowest taxonomic level possible, cataloged, analyzed, and delivered to an accredited museum repository for permanent curation and storage. The cost of curation is assessed by the repository and is the responsibility of the project proponent.

At the conclusion of laboratory work and museum curation, a Paleontological Mitigation Report shall be prepared describing the results of the paleontological mitigation monitoring efforts associated with the project. The report shall include a summary of the field and laboratory methods, an overview of the project area geology and paleontology, a list of taxa recovered (if any), an analysis of fossils recovered (if any) and their scientific significance, the signed receipt of confirmation of museum deposition, and recommendations. The report shall be submitted to the designated museum repository, the project proponent, and other interested state and/or federal agencies involved within 45 days following completion of the monitoring and laboratory work.

Cumulative Impacts

Impact PALEO-2. Cumulative Impacts to Paleontological Resources

***<u>Westlands Solar Park</u>*. The WSP solar development would not make a cumulatively considerable contribution to paleontological resource impacts with mitigation; therefore, the WSP solar projects would not have a significant cumulative impact on paleontological resources. (*Less-than-Significant Cumulative Impact with Mitigation*)**

***WSP Gen-Tie Corridors*. The gen-tie projects would not make a cumulatively considerable contribution to paleontological resource impacts with mitigation; therefore, the transmission projects would not have a significant cumulative impact on paleontological resources. (*Less-than-Significant Cumulative Impact with Mitigation*)**

Geographic Scope of Cumulative Impact Analysis

The potential for cumulative destruction of paleontological resources is statewide in scope and impact. For purposes of this analysis, the geographic scope of the cumulative impact analysis for paleontological resources with respect to the WSP solar development and the WSP gen-tie projects is Kings County and southwestern Fresno County. The near-term cumulative projects considered in this analysis are shown in Figures PD-9 and PD-10, and are listed in Tables PD-9 and PD-10. For purposes of the far-term cumulative analysis, the buildout of the designated urban land uses under the Kings County and Fresno County General Plans, as well as buildout under the General Plans of incorporated cities in the vicinity, serves to define the nature and location of cumulative land uses anticipated under far-term conditions.

Westlands Solar Park

Near Term

Since most of the geologic units that underlie the valley floor have a low potential for paleontological resources, the probability that any given project will encounter previously unknown paleontological resources is low. However, the areas that are underlain by lacustrine deposits (Ql) of the lakebed and margins of former Tulare Lake, as well as areas with exposures of older alluvium (Qc), have a high potential for paleontological resources. Some project sites in Kings County, such as the Quay Valley project site, are partially underlain by lacustrine deposits and therefore have a high potential for paleontological resources. While Kings County does not have any policies or regulations that address protection of paleontological resources, the County's implementation of CEQA review for all solar projects is expected to provide for appropriate mitigation, similar to that set forth in Mitigation Measure PALEO-1 above, for projects located in paleontologically sensitive areas. It is reasonable to assume that such mitigation would be effectively implemented at each affected project site, such that the cumulative impact to paleontological resources would be less than significant. At WSP solar project sites that are underlain by paleontologically sensitive geologic units, it is expected that Mitigation Measure PALEO-1 would be fully and effectively implemented. Thus, the near-term cumulative impact to paleontological resources would be *less than significant with mitigation*. In any case, the contribution from the WSP solar development to any cumulative impacts would be *not cumulatively considerable with mitigation*.

Far Term

It is expected that most development under the general plans would occur outside of the paleontologically sensitive geologic units such as lacustrine (Ql) and older Alluvium (Qc). For projects that are proposed for sites with high potential for paleontological resources, it is expected that the CEQA reviews required for those projects would provide for effective protection of any inadvertent fossil discoveries, such that the cumulative impact to paleontological resources would be less than significant. The final solar projects within WSP are expected to be completed by 2030. If any of those WSP solar sites are underlain by paleontologically sensitive geologic units, it is expected that Mitigation Measure PALEO-1 above would be

fully and effectively implemented. Thus, the far-term impact to paleontological resources associated with WSP solar development would be *cumulatively less than significant with mitigation*. In any event, the contribution from the WSP solar development to any cumulative impacts would be *not cumulatively considerable with mitigation*.

WSP Gen-Tie Corridors

Near-Term

The WSP gen-tie corridors pass mainly over alluvial fan deposits (Qf), with the eastern ends of both gen-tie corridors underlain by basin deposits (Qb). The younger alluvium of the valley floor has low potential for paleontological resources at the surface, with increasing sensitivity with depth toward the older alluvial deposits beneath.

During the course of CEQA reviews, proposed projects would be required to undergo evaluation of paleontological sensitivity and identification of appropriate mitigation measures to avoid destruction of paleontological resources. It is expected that near-term cumulative projects would be subject to paleontological mitigation measures similar to those set forth in Mitigation Measure PALEO-1 above. Therefore, it is reasonable to assume that each cumulative project would avoid destruction of paleontological resources, and reduce the project impact to less-than-significant levels. Therefore, cumulative impacts to paleontological resources in conjunction with the WSP gen-tie projects in the near term are anticipated to be *less than significant*. In any event, since the WSP gen-tie projects would avoid impacts to paleontological resources through implementation of Mitigation Measure PALEO-1 above, the contribution of WSP gen-tie projects to any cumulative impact to paleontological resources in the near term would be *not cumulatively considerable with mitigation*.

Far Term

Far-term development in the vicinity of the transmission corridors could potentially result in cumulatively significant impacts to paleontological resources. However, as discussed above for near-term conditions, it is anticipated that the CEQA reviews for each project would ensure that projects are evaluated for paleontological sensitivity, and that mitigation measures similar to those set forth in Mitigation Measure PALEO-1 above would be required as appropriate to avoid destruction of paleontological resources. Therefore, cumulative impacts to paleontological resources in conjunction with the WSP gen-tie projects in the far term are anticipated to be *less than significant*. In any event, since the WSP gen-tie projects would avoid impacts to paleontological resources through implementation of Mitigation Measure PALEO-1 above, the contribution of the WSP gen-tie projects to any cumulative impact in the far term would be *not cumulatively considerable with mitigation*.

Mitigation Measures:

***Westlands Solar Park*. Implement MM PALEO-1. No additional mitigation is required**

***Westlands Transmission Corridors*. Implement MM PALEO-1. No additional mitigation is required.**

REFERENCES/BIBLIOGRAPHY – PALEONTOLOGICAL RESOURCES

AEW 2017 — Applied EarthWorks (AEW). 2017. *Paleontological Resource Assessment for the Westlands Solar Park and Gen-Tie Project, Fresno and Kings Counties, California*. June. Contained in Appendix E of this EIR.

Fresno County 2000b — County of Fresno. 2000. *Fresno County 2000 General Plan – Policy Document*. October. http://www2.co.fresno.ca.us/4510/4360/General_Plan/GP_Final_policy_doc/Table_of_Contents_rj_blue.pdf

Fresno County 2016 — County of Fresno. 2016. *Fresno County Code of Ordinances*. As amended through April 26, 2016. https://www.municode.com/library/ca/fresno_county/codes/code_of_ordinances

Kings County 2010a — County of Kings. 2010. *2035 Kings County General Plan*. Adopted January 26. http://www.countyofkings.com/departments/community-development-agency/information/2035-general-plan

Kings County 2016b — Kings County. 2016. *Kings County Development Code. Kings County Code of Ordinances, Appendix A - Ordinance No. 668.12*. Dated January 26, 2016; Effective February 26, 2016. http://www.countyofkings.com/home/showdocument?id=12535

SVP 2010 — Society of Vertebrate Paleontology (SVP). 2010. *Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources: Society of Vertebrate Paleontology Impact Mitigation Guidelines Revision Committee*. http://vertpaleo.org/Membership/Member-Ethics/SVP_Impact_Mitigation_Guidelines.aspx

This page intentionally left blank

3.12. PUBLIC SERVICES

3.12.1. ENVIRONMENTAL SETTING

Westlands Solar Park

Fire Protection Services

The Kings County Fire Department serves the unincorporated areas of the County including the four unincorporated communities of Armona, Home Garden, Kettleman City, and Stratford. The County Fire Department also provides contracted services to the cities of Avenal and Corcoran. Kings County operates ten fire stations and one headquarters with 89 full-time employees who are assisted by 10 volunteer companies with approximately 100 volunteer firefighters. . Each station conducts assessments of proposed industrial and business facilities to assure compliance with safety and design capacity requirements. Fire stations also handle weed abatement on a complaint basis.

The nearest KCFD fire stations to the WSP plan area are KCFD Station #10, located in Stratford approximately 3 miles east of the eastern WSP boundary, and Station #9, located in Kettleman City approximately 2 miles south of the southern end of the WSP plan area. Response times from the two nearest stations would range from 4 minutes to 15 minutes depending on the location of the call within the WSP site. Backup response would be provided by Station #7 (south Lemoore) and Station #5 (Armona), which would respond to a call from the WSP plan area within the KCFD's 20-minute rural response time goal. The KCFD maintains mutual aid agreements with the fire departments of Lemoore and Hanford, and also with the NAS Lemoore Fire Department and Santa Rosa Rancheria Fire. The KCFD's other responsibilities include: review of building plans for compliance with fire safety requirements; emergency medical response; and preparation and implementation of the County's emergency management plan.

The KCFD provides first responder emergency medical service to all County residents. This service does not include advanced life support (paramedic) or emergency transport, which is provided by an exclusive private contractor (currently American Ambulance). Kings County contracts directly with the ambulance company, while the Central California Emergency Medical Services Agency (CCEMSA) is responsible for ensuring adequate levels and quality of ambulance service the region. The ambulance services nearest to the WSP plan area are located in Lemoore and Hanford.

The Potential Fire Hazards map of the Kings County General Plan Health and Safety Element (General Plan Figure HS-9) shows most of the WSP plan area as being subject to "little or no threat" or "moderate threat," while areas within 2400 meters (1.5 miles) of the Shannon Ranch complex are shown as being subject to "High Threat" (Kings County 2009c). The WSP plan area is not included in a Fire Hazard Severity Zone (FHSZ) as mapped by the California Department of Forestry and Fire Protection (CalFire 2007a, CalFire 2007b).

Law Enforcement Services

Law enforcement services for the WSP plan area are provided by the Kings County Sheriff's Department (KCSD) from its headquarters in Hanford. The Department currently has 148 sworn officers and 101 non-sworn personnel. The County is currently divided into six beat districts with five Sheriff's substations located throughout Kings County. Each beat district has at least one deputy sheriff on duty at all times to serve the unincorporated communities and surrounding County areas. The KCSD has mutual-aid agreements statewide. The Department's response time goal for priority emergency calls is 20 minutes (Kings County 2010a). The response time to the WSP plan area would be a maximum of 15 to 20 minutes. The principal crimes committed in Kings County in 2014 (the last year for which statistics are available) were assault, burglary, theft, motor vehicle theft, and drug and alcohol offenses (OAG 2017).

The California Highway Patrol (CHP) provides traffic enforcement along State highways and County roadways within Kings County. The nearest CHP offices are located in Hanford and Coalinga.

WSP Gen-Tie Corridors

Fire Protection Services

Fire protection and emergency medical services along the gen-tie corridors are provided by the fire departments of Kings and Fresno counties, as well as CalFire. The Kings County Fire Department, which would provide fire and emergency medical service to the eastern portions of the WSP gen-ties located within Kings County, is described above. The Fresno County Fire Department is briefly described below.

The Fresno County Fire Protection District operates 13 fire stations throughout Fresno County. The FCFPD would provide fire and emergency medical response to approximately 16 miles of the WSP gen-tie corridors. The District has fire stations located in the vicinity of the gen-tie corridors, including stations in or near Huron and Coalinga (FCFPD 2016).

CalFire has primary responsibility for the foothill areas west of I-5. The nearest CalFire station that would respond to a request for mutual aid in the vicinity of the gen-tie corridors is located in Coalinga (CalFire 2007c).

Law Enforcement Services

Law enforcement services in the vicinity of gen-tie corridors are provided by the Sheriff's departments of Kings and Fresno counties, as well as the CHP. The Kings County Sheriff's Department, which would provide law enforcement to the eastern portions of the WSP gen-ties located within Kings County, is described above. The Fresno County Sheriff's Department is briefly described below.

The Fresno County Sheriff's Department (FCSD) provides law enforcement services to the unincorporated areas of Fresno County and several incorporated cities by contract. Sheriff's patrols are divided into four patrol areas, each with its own substation. The western area of Fresno County is served by patrols dispatched from the Area 1 substation located in the City of San Joaquin (FCSD 2016).

The California Highway Patrol (CHP) handles all traffic enforcement and vehicle accident investigations for the unincorporated areas of Kings and Fresno counties. The CHP serves the western portions of the affected counties from offices located in Hanford and Coalinga (CHP 2016).

3.12.2. REGULATORY CONTEXT

Federal and State

There are no federal or state laws, orders, regulations, or standards that are related to public services for the WSP solar facilities or WSP gen-tie lines.

Kings County

Kings County General Plan

The 2035 Kings County General Plan contains the following goal, objectives and policies related to fire protection and police services that are relevant to the Westlands Solar Park and gen-tie corridors:

Health and Safety Element

A. Community Safety

HS GOAL C1 Ensure the protection and wellbeing of residents, visitors and businesses that enables long term sustainability for future generations.

HS OBJECTIVE C2.1 Provide sufficient law enforcement presence within each community district and other unincorporated areas of the County to protect residents, businesses, and visitors from personal and property crimes.

HS Policy C2.1.2: Promote community safety by ensuring communities have sufficient sheriff coverage to provide 20 minute or faster response times to priority emergency calls.

HS OBJECTIVE C2.2 Provide quality fire protection services throughout the County by the Kings County Fire Department, and Fire safety preventative measures to prevent unnecessary exposure of people and property to fire hazards in both County Local Responsibility Areas and State Responsibility Area.

HS Policy C2.2.2: Development proposals and code revisions shall be referred to the County Fire Department for review and comment.

HS Policy C2.2.4: Review development proposals according to California Department of Forestry and Fire Protection "Fire Hazard Severity Zone Maps" to determine whether a site is located within a Very High Fire Hazard Severity Zone and subject to Wildland-Urban Interface Fire Area Building Standards and

defensible space requirements as adopted under Senate Bill 1595 and effective January 1, 2009.

HS Policy C2.2.5: Forward for review and comment all proposed structures within the State Responsibility Area to the California Department of Forestry and Fire Protection within all State Responsibility Areas.

Land Use Element

LU Policy D1.4.9: Development shall pay County Public Facility Impact Fees, as established by County Ordinance 633, at the time a building permit is issued.

Kings County Code of Ordinances

Kings County Building Code

The County Code of Ordinances, at Section 5-36, adopts and incorporates by reference the 2007 Edition of the California Building Code (CBC) as the Kings County Building Code, which is applicable to all building construction in the Kings County.

Fire Safety

Under Section 10-7 of the County Code, the County Fire Department applies the fire safety standards of the National Fire Protection Association and the American Insurance Association, successor to the National Board of Fire Underwriters.

Kings County Public Facility Impact Fees

On June 21, 2005, the Kings County Board of Supervisors adopted Ordinance 633 which enabled public facilities fees to be levied on new development within the County. The fee structure was based on a Public Facilities Impact Fees report and was established to maintain existing levels of service through the year 2025. The public facilities fees are allocated to specific uses for protection and public services including: Countywide Public Protection, Sheriff, Fire, Library, and Animal Control.

Kings County Improvement Standards

The Kings County Improvements Standards serves as an engineering reference for Kings County staff and private parties in the design and construction of improvements for public works projects and private development improvements. The standards include engineering design specifications for the construction of streets, water supply systems, storm drainage, and sewage disposal.

Fresno County

Since no portion of the Westlands Solar Park is located within Fresno County, the County's plans, policies and regulations are not applicable to WSP solar development. Transmission (and gen-tie) projects that are to be constructed or co-sponsored by an investor-owned utility (IOU) such as PG&E are subject to the sole permitting jurisdiction of the California Public Utilities Commission (CPUC) and are exempt from local jurisdiction. However, CPUC General Order 131-D requires public utilities to coordinate with local

jurisdictions regarding consistency of their projects with local plans and policies (CPUC 1994). Transmission lines that may be privately owned (such as gen-ties) are not under CPUC jurisdiction, and thus are subject to Fresno County jurisdiction and may require the issuance of a conditional use permit from the County.

Fresno County General Plan

The Public Services and Facilities Element of the Fresno County General Plan contains several relevant policies related to public services such as fire protection and law enforcement. In general, these policies are directed toward the protection of life and property, and set forth general objectives for levels of service, response times, and the review of development projects to ensure safety standards and features are incorporated. The Public Services and Facilities Element is directly accessible at the following web address:
http://www2.co.fresno.ca.us/4510/4360/General_Plan/GP_Final_policy_doc/Public_Facilities_Element_rj.pdf

3.12.3. ENVIRONMENTAL IMPACT ANALYSIS

SIGNIFICANCE CRITERIA

Based on the State CEQA Guidelines, Appendix G, the project would be considered to result in a significant public services impact if it would:

1. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services:

   a) Fire Protection. (Impact PS-1)

   b) Police Protection. (Impact PS-2)

   c) Schools. (Impact PS-3)

   d) Parks. (Impact PS-3)

   e) Other public facilities. (Impact PS-3)

IMPACTS AND MITIGATION

Impact PS-1. Fire Protection Services

***Westlands Solar Park*. The WSP solar projects would result in an incremental increase in demand for fire protection services; however, these increases are expected to be small and thus would not result in degradation of service levels or in the need for new or expanded facilities. (*No Impact*)**

***WSP Gen-Tie Corridors*. The WSP gen-tie projects would result in an incremental increase in demand for fire protection services; however, these increases are expected to be small and thus would not result in degradation of service levels or in the need for new or expanded facilities. (*No Impact*)**

This impact analysis addresses significance criterion '1a' above.

Westlands Solar Park

Fire Hazards during Construction

Construction of the solar facilities, substations, and power collection lines would involve the use of heavy construction equipment, vehicles, generators, and hazardous materials (e.g., fuels, lubricating oils, and welding materials), which pose potential fire hazards. The risk of fire would be primarily related to smoking, refueling, and operating vehicles and equipment off roadways where dry vegetation could be ignited. Welding activities also have the potential to result in the combustion of vegetation.

Fire Hazards during SGF Operation

During solar facility operation, equipment such as transformers, inverters, and electrical equipment at substations would involve the use of oils (e.g., dialectic or mineral oils and lubricants) and fuels, which would pose fire hazards. Maintenance vehicles and panel washing trucks would travel among the solar arrays where low vegetation would be dry in summer and combustible. Overhead power collection lines would pose a fire hazard in the event a conducting object comes in proximity to a line or if a live-phase conductor (electrical wire) falls to the ground. Electrical equipment such as transformers and inverters would be placed on concrete pads and housed in steel and concrete equipment enclosures, minimizing the risk of electrical sparks that could ignite vegetation in the event of equipment failure. In addition, all electrical equipment would be built to industry safety design standards, further reducing the risk of electrical fires at the site.

Fire Protection and Prevention

The Kings County Fire Department would respond to calls from the WSP plan area involving fire or medical emergencies. The first responders would be from either Station #10 in Stratford, Station #7 in south Lemoore, or Station #9 in Kettleman City, with backup from other KCFD stations in the area or from Fresno County Fire Department stations in Huron or Harris Ranch. According to KCFD staff, the Department has adequate staff and equipment to serve the project, and would typically be able to

respond to emergency calls from the WSP plan area in 10 minutes or less. The Department anticipates that calls for service from the WSP plan area would infrequent. As such, providing service to WSP solar facilities would have a minimal impact on Fire Department operations and would not compromise the Department's ability to provide adequate services to other parts of the County within its response time goals. Thus the increased demand for fire protection service from WSP solar facilities would not compromise the Department's ability to provide adequate services to other parts of the County within its response time goals. Thus the increased demand for fire protection service from the project would not degrade service levels or result in the need for new or altered Fire Department facilities (James 2016). In addition, a portion of the County development fees to be paid by the project applicant prior to building permit issuance would be received by the KCFD in support of fire protection services. Therefore, the project would result in a minor increase in demand for fire protection services, and would have a *less-than-significant* impact in terms of necessitating new or expanded fire department facilities to maintain adequate service levels.

Even though the WSP solar projects would not have a significant impact on fire protection services, as discussed above, this less-than-significant impact would be further reduced through fire protection features to be incorporated into the project as required by fire codes or conditions of approval, as described below.

Each WSP solar project would be constructed in accordance with the California Fire Code. Electrical equipment such as transformers and inverters would be placed on concrete foundation pads and housed in steel and concrete equipment enclosures, minimizing the risk of electrical sparks that could ignite vegetation in the event of equipment failure. All electrical equipment (including inverters) not located within a larger structure would be designed specifically for outdoor installation, and all electrical equipment would be subject to product safety standards. Portable carbon dioxide (CO_2) fire extinguishers would be mounted at the inverter/transformer pads throughout the project. Maintenance crews would regularly inspect facilities for reliability and safety.

Each WSP solar project would be required to comply with fire safety standards under Section 10-7 of the Kings County Code, under which the regulations of the National Fire Protection Association and the American Insurance Association are applied. The Fire Marshal and Public Works Department would review the project plans to ensure compliance with all code requirements and standards. The Building Division of the Kings County Community Development Agency would ensure Fire Code requirements are met through the plan check process, building permit issuance, construction inspection, and issuance of certificate of occupancy once all of the construction work on a given SGF has been completed and the final inspection has been approved

The approval of each WSP solar project would be subject to conditions including compliance with the provisions of the Kings County Improvement Standards with respect to emergency vehicle access. As required by the Fire Department, all structures (including solar arrays) must be accessible by fire-fighting equipment and personnel via internal fire access driveways. These internal gravel driveways would consist of a durable dust-free (oiled) surface, in accordance with the Kings County Improvement Standards, which would inhibit the growth of vegetation. The Fire Department also requires minimum of 4 feet of separation between rows of solar modules to allow access by fire suppression personnel. The project approvals would also include a condition that all detailed project plans are subject to review and approval by the County Fire Marshal to ensure that potential fire hazards are adequately addressed.

As discussed in Chapter *2. Project Description*, Kings County requires preparation and implementation of Agricultural Management Plans for solar projects approved by the County. These requirements are described in Section *3.2. Agricultural Resources* under Mitigation Measure AG-1, and specify that over 90 percent of the surface area of each solar project is to be revegetated with native seed mix to sustain continued agricultural production on the site through sheep grazing. The grazing activity would keep vegetative cover low and thus reduce fuel load buildup and reduce the potential hazard from grass fires.

In summary, although the WSP solar projects would result in an incremental increase in demand for Fire Department services, these increases are expected to be small and thus would not result in degradation of service levels or in the need for new or expanded facilities. Therefore, WSP solar development would have a *less-than-significant* impact in terms of necessitating new or expanded fire department facilities that would result in substantial adverse impacts.

WSP Gen-Tie Corridors

Fire protection services to the WSP gen-tie corridors would be provided by the Fire Departments of Kings and Fresno counties, as well as CalFire and other fire departments in the area that participate in automatic aid or mutual aid agreements. During construction of the gen-tie projects, situations may arise that would require fire suppression services or emergency medical services in the event of worker injury. As discussed in Section *3.7. Hazards and Hazardous Materials*, the potential for energized gen-tie lines to be a source of fire is negligible, and thus would result in a minimal demand for fire protection services. Also, the WSP gen-tie projects would not introduce any new land uses or population to the corridor area that would increase long-term demand levels for fire protection services. Therefore, the WSP gen-tie projects would not require new or physically altered police protection facilities, and thus would have *no impact* on fire protection services.

In summary, although the WSP gen-tie projects would result in an incremental increase in demand for fire protection services, these increases are expected to be small and thus would not result in degradation of service levels or in the need for new or expanded facilities. Therefore, the WSP gen-tie projects would have *no impact* in terms of necessitating new or expanded fire department facilities that would result in substantial adverse impacts.

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

Impact PS-2. Law Enforcement and Security

***Westlands Solar Park*. The WSP solar projects would result in a small increase the demand for law enforcement services, and therefore would not degrade service levels or result in the need for new or altered law enforcement facilities. (*No Impact*)**

***WSP Gen-Tie Corridors*. The WSP gen-tie projects would result in a small increase the demand for law enforcement services, and therefore would not degrade service levels or result in the need for new or altered law enforcement facilities. (*No Impact*)**

This impact analysis addresses significance criterion '1b' above.

Westlands Solar Park

Sheriff's Department Services

Law enforcement services to the WSP solar projects would be provided by the Kings County Sheriff's Department. During construction of WSP solar facilities, slow moving trucks could result in temporary congestion near the project entrances, and could pose a safety hazard due to abrupt changes in the speed of traffic flow, or due to slow turning movements across on-coming lanes of traffic. Any temporary traffic disruptions would involve coordination the Sheriff's Department. The temporary traffic hazards associated with WSP solar project construction are discussed in Section *3.13. Transportation/Traffic*, under Impact TR-4. Any potential traffic hazard impacts would be minimized through implementation of Mitigation Measure TR-1a. The traffic control measures required during construction may result in a minor temporary use of the Kings County Sheriff's Department's resources; however, the overall impact to law enforcement services would be *less than significant*.

Once the each solar facility is completed and operational, calls for service from the WSP solar projects are expected to be infrequent, according to the Sheriff's Department staff. As such, providing service to the solar projects would have a minimal impact on Sheriff's Department operations and would not compromise the Department's ability to provide adequate services to other parts of the County. Thus the increased demand for law enforcement services from the WSP solar projects would not degrade service levels or result in the need for new or altered Sheriff's Department facilities (Fry 2016). In addition, a portion of the County development fees to be paid by each project applicant prior to building permit issuance would be received by the Sheriff's Department in support of law enforcement services. Therefore, the WSP solar projects would result in a minor increase in demand for law enforcement services, and would have a *less-than-significant* impact in terms of necessitating new or expanded Sheriff's Department facilities to maintain adequate service levels.

WSP Solar Project Security Measures

Although the WSP solar projects would result in a minor increase in demand for law enforcement services, and would have a *less-than-significant* impact in terms of necessitating new or expanded Sheriff's Department facilities to maintain adequate service levels, a number of security measures would be included in the design of each solar project to prevent theft and vandalism. The standard design

features for solar project security are described as follows. The perimeter of each project phase would be securely fenced and gated to prevent unauthorized access. Electronic surveillance equipment such as infrared security cameras and motion detectors would be installed around the facilities. The installation and operation of these security features are intended to act as a deterrent to crime. These project security design features would be operationally integrated with the services of a private security company(s). The video feeds from the installed surveillance equipment would be transmitted in real time to the off-site security contractor(s) for monitoring. In the event that a surveillance system detects a breach, a security representative would be dispatched to investigate.

In summary, although the WSP solar projects would result in incremental increases in demand for Sheriff's services, these increases are expected to be small and thus would not result degradation of service levels or in the need for new or expanded facilities. Therefore, the WSP solar projects would have a *less-than-significant* impact in terms of necessitating new or expanded law enforcement facilities that would result in substantial adverse impacts.

WSP Gen-Tie Corridors

Police protection services to the WSP gen-tie corridors would be provided by the Sheriff's departments of Kings and Fresno counties, as well as the California Highway Patrol. During construction, the transmission projects may require police services due to possible theft of construction equipment and/or vandalism that might occur during the construction period. Transmission line construction may also require temporary partial closure of roadways, especially where conductors are being strung over public roadways. Deliveries by heavy transport trucks may also require traffic control measures. Any temporary road closures or major traffic disruptions would involve coordination with local law enforcement. The temporary traffic hazards associated with transmission project construction are discussed in Section *3.13. Transportation/Traffic*, under Impact TR-4. Any potential traffic hazard impacts would be minimized through implementation of Mitigation Measure TR-1b. The traffic control measures required during construction would result in a minor temporary use of Sheriff's departments' resources; the overall impact to law enforcement services would be *less than significant*.

The WSP gen-tie projects would not introduce any new land uses or population to the area that would increase long term demand levels for police protection services. Once constructed, the gen-tie projects may result in occasional police response to trespassing or vandalism. However, it is expected that gates would be installed where required at fenced property lines to restrict general and vehicular access, thereby reducing opportunities for trespassing, and the need for calls for police services. The overall demand for law enforcement services would be very low. Therefore, the WSP gen-tie projects would not require new or physically altered police protection facilities, and thus would have *no impact* on police protection services.

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

Impact PS-3. Schools, Parks, and Other Public Facilities

***Westlands Solar Park*. The WSP solar projects would result in no demand for schools, parks, or other public facilities; therefore, WSP solar development would have no impact on such public facilities. (*No Impact*)**

***WSP Gen-Tie Corridors*. The WSP gen-tie projects would result in no demand for schools, parks, or other public facilities; therefore, the gen-tie projects would have no impact on such public facilities. (*No Impact*)**

This impact analysis addresses significance criteria '1c-f' above.

Westlands Solar Park

Schools

The WSP solar projects would not include residential components and thus would not result in the need for new or expanded school facilities. Therefore, WSP solar development would have *no impact* on schools. However, each solar project would pay a school mitigation fee, as mandated by State law for all commercial development.

Parks

Demand for parks and recreation is mainly generated by residential development. No permanent staff would be stationed at the WSP solar facilities, and the few staff who would visit the project to perform routine maintenance activities would be unlikely to seek out recreational activities while in the WSP area. As such, the WSP solar projects would not increase demand for parks and recreational facilities, and would have *no impact* in terms of necessitating new or expanded parks facilities.

Other Public Facilities

The WSP solar projects would not generate demand for social services, courts, hospitals, libraries, or other public services. As such, WSP solar development would have *no impact* in terms of necessitating new or expanded facilities to maintain adequate service levels for other public services.

WSP Gen-Tie Corridors

Since electrical transmission facilities result in no increases in population or permanent employment, these facilities would generate no demand for schools, parks, or other public facilities. As such, the WSP gen-tie projects would result in *no impacts* with respect to schools, parks, or other public facilities.

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

Cumulative Impacts

Impact PS-4. Cumulative Public Services Impacts

***Westlands Solar Park*. The WSP solar projects, combined with other related cumulative projects, would generate small increases in demands for fire protection, law enforcement, and other public services; however, these small increases in service demand are not expected to require additional staff and equipment, or the construction of new or expanded facilities. (*No Cumulative Impact*)**

***WSP Gen-Tie Corridors*. The WSP gen-tie projects, combined with other related cumulative projects, would generate small increases in demands for fire protection, law enforcement, and other public services; however, these small increases in service demand are not expected to require additional staff and equipment, or the construction of new or expanded facilities. (*No Cumulative Impact*)**

Geographic Scope of Cumulative Analysis

Fire protection, law enforcement, and other public services are provided to the WSP plan area by Kings County. Public services to the WSP gen-tie corridors would be provided by Kings and Fresno counties. Therefore, the geographic scope of this cumulative analysis encompasses the unincorporated areas of western Kings County and southwestern Fresno County.

Westlands Solar Park

Near Term

The near-term cumulative analysis of public services impacts considers the approved, pending, and completed projects within the unincorporated areas of Kings County. These projects are listed in Table PD-9 and shown in Figure PD-9, in Chapter *2. Project Description*. All of the cumulative projects consist of solar PV generating facilities.

Fire Protection Services

Fire protection services for all the cumulative projects would be provided by the Kings County Fire Department. The potential demand for Fire Department services is expected to be very low at each cumulative site. Thus the collective demand for Fire Department services is also expected to be low, and would not cumulatively result in the need for new or expanded facilities. Therefore, the near-term cumulative impact to fire services would be *less than significant*.

Law Enforcement Services

Law enforcement services for all the cumulative projects would be provided by the Kings County Sheriff's Department. The potential demand for Sheriff's Department services is expected to be very low at each cumulative site. Thus the collective demand for Sheriff's Department services is also expected to be low, and would not cumulatively result in the need for new or expanded facilities. Therefore, the near-term cumulative impact to law enforcement services would be *less than significant*.

Other Public Services

The types of other public services commonly affected by development projects include schools, parks, social services, courts, hospitals, libraries, and other public services. The WSP projects and all other cumulative projects consist of solar PV generating facilities. These facilities result in no permanent increases in population or employment, and therefore, do not result in increased demand for these other public services. As such, the near-term cumulative projects would collectively have no impact on these public services, and would not collectively result in the need for new or expanded facilities for these services. Therefore, there would be *no cumulative impact* to schools, parks, or other public services in the near term.

Far Term

Fire Protection Services

Development under the Kings County General Plan through 2035 would result in additional structures and population that would increase demand for fire protection services. Fire Department staff and equipment would be augmented over time to meet increases in service demands as they occur. The additional staff and equipment would be funded through mitigation fees as well as sales and property tax revenue generated by the new development. Therefore, the cumulative impacts to fire protection service would be *less than significant* in the far term.

The County Fire Department does not expect that growth under the General Plan through 2035 would necessitate the construction of new or expanded fire stations (Kings County 2009c, p. 4.12-10). It is expected that the majority of future growth will occur within existing unincorporated communities or on the urban fringes of incorporated cities in the County. The County's existing 10 fire stations are well situated to respond to calls from those population centers, and are expected to be adequate to serve these communities through the life of the General Plan. In the event that currently unforeseen expansions to fire facilities are needed, the potential environmental impacts associated with their construction would be subject to environmental review on a project-specific basis for each facility, with appropriate mitigation for any impacts identified accordingly. It is expected that any impacts resulting from such new or expanded facilities would be mitigated to less-than-significant levels. Therefore, the far-term cumulative impacts to fire protection services would be *less than significant*.

Law Enforcement Services

The growth contemplated under the 2035 General Plan would result in additional population and property that would increase demand for law enforcement services. Sheriff's Department staff would be augmented over time to meet increases in service demands as they occur. The additional staff levels

would be funded through mitigation fees as well as sales and property tax revenue generated by the new development. Therefore, the cumulative impacts to law enforcement service would be *less than significant* in the far term.

It is not expected that growth under the General Plan through 2035 would necessitate the construction of new or expanded Sheriff's Department facilities (Kings County 2009c, p. 4.12-14). In the event that currently unforeseen expansions to Sheriff's Department facilities are needed, the potential environmental impacts associated with their construction would be subject to environmental review on a project-specific basis for each facility, with appropriate mitigation for any impacts identified accordingly. It is expected that any impacts resulting from new or expanded facilities would be mitigated to less-than-significant levels. Therefore, the far-term cumulatively impacts to law enforcement services would be *less than significant*.

Other Public Services

Under State law, impacts to school enrollment from new development is deemed to be fully mitigated by state-mandated school impact fees. Thus the impact of far-term cumulative growth under the Kings County General Plan upon schools is considered to be *less than significant*. As discussed under Impact PS-3 above, the WSP solar development would result in no impacts to schools. Therefore, the far-term impact of WSP solar development upon schools would be *not cumulatively considerable*.

Regarding parks, there is currently sufficient parkland within Kings County to meet the demands of growth contemplated under the 2035 Kings County General Plan (Kings County 2009a, p. 4.13-3). Thus the impact of far-term cumulative growth under the Kings County General Plan upon parks is considered to be *less than significant*. As discussed under Impact PS-3 above, the WSP solar development would result in no impacts to parks. Therefore, the far-term impact of WSP solar development on parks would be *not cumulatively considerable*.

As discussed under Impact PS-3 above, the WSP solar development would result in no increase in demand for social services, courts, hospitals, libraries, or other public facilities, and thus would have no impact in terms of requiring new or expanded facilities for such services. Therefore, the far-term impact of WSP solar development on other public services would be *not cumulatively considerable*.

In summary, the cumulative impacts to public services associated with the construction and operation of WSP solar facilities under both near-term and far-term cumulative conditions would be *less than significant*.

WSP Gen-Tie Corridors

Near Term

The near-term cumulative analysis of public services impacts considers the approved, pending, and completed projects within the western areas of Kings and Fresno counties. These projects are listed in Tables PD-9 and PD-10, and are shown in Figures PD-9 and PD-10, in Chapter *2. Project Description*. Most of the cumulative projects consist of solar PV generating facilities. The exceptions include two transmission projects – the Gates to Greg Transmission Project (Central Valley Power Connect) – and the Westside Transmission Project.

Fire Protection Services

Fire protection services for the cumulative projects would be provided by the nearest responding stations of the county fire departments and CalFire. The potential demand for fire protection services is expected to be very low at each cumulative site. Thus the collective demand for fire protection services from the cumulative projects would not result in the need for new or expanded facilities. Therefore, the cumulative near-term impact to fire protection services associated with the WSP gen-tie projects would be *less than significant*.

Law Enforcement Services

Law enforcement services for the cumulative projects would be provided by the nearest responding substations of the county Sheriff's departments and CHP. The potential demand for law enforcement services is expected to be very low at each cumulative site. Thus the collective demand for law enforcement services from the cumulative projects would not result in the need for new or expanded facilities. Therefore, the cumulative near-term impact to law enforcement services would be *less than significant*.

Other Public Services

The types of other public services commonly affected by development projects include schools, parks, social services, courts, hospitals, libraries, and other public services. The cumulative projects consist of solar PV generating facilities and transmission facilities which would result in no permanent increases in population or employment, and therefore, would not result in increased demand for these other public services. As such, there would be no need to provide new or expanded facilities for these other public services. Therefore, the cumulative near-term impact to these other public services would be *less than significant*.

Far Term

Fire Protection Services

Development under the general plans of Kings and Fresno counties would result in additional development and population that would increase demand for fire protection services. Fire Department staff and equipment at each county would be augmented over time to meet increases in service demands as they occur. The additional staff and equipment would be funded through mitigation fees as well as sales and property tax revenue generated by the new development. Therefore, the cumulative impacts to fire protection service would be *less than significant* in the far term.

Within each of the affected counties, it is expected that new or expanded fire equipment and facilities would be planned for and constructed as needed to meet the demands of growth planned under their respective general plans. It is expected that any impacts resulting from such new or expanded facilities would be mitigated to less-than-significant levels. Therefore, the far-term cumulative impacts to fire protection services would be *less than significant*. As discussed under Impact PS-1, above, the WSP gen-tie facilities would not require or contribute to the need for new or expanded Fire Department facilities, and therefore would have no impact with respect to fire protection services. Therefore, the far-term impact of WSP solar development upon fire protection services would be *not cumulatively considerable*.

Law Enforcement Services

Development under the general plans of Kings and Fresno counties would result in additional development and population that would increase demand for law enforcement services. Sheriff's Department staff and equipment at each county would be augmented over time to meet increases in service demands as they occur. The additional staff and equipment would be funded through mitigation fees as well as sales and property tax revenue generated by the new development. Therefore, the cumulative impacts to law enforcement services would be *less than significant* in the far term.

Within each of the affected counties, it is expected that new or expanded law enforcement facilities would be planned for and constructed as needed to meet the demands of growth planned under their respective general plans. It is expected that any impacts resulting from such new or expanded facilities would be mitigated to less-than-significant levels. Therefore, the far-term cumulative impacts to law enforcement services would be *less than significant*. As discussed under Impact PS-2, above, the Westlands Solar Park transmission facilities would not require or contribute to the need for new or expanded Sheriff's Department facilities, and therefore would have no impact with respect to law enforcement services. Therefore, the far-term impact of the WSP gen-tie facilities upon law enforcement services would be *not cumulatively considerable*.

Other Public Services

Under State law, impacts to school enrollment from new development is deemed to be fully mitigated by state-mandated school impact fees. Thus the impact of far-term cumulative growth under the general plans of the affected counties upon schools is considered to be less than significant. As discussed under Impact PS-3 above, the WSP gen-tie projects would result in no impacts to schools. Therefore, the far-term impact of the WSP gen-tie projects upon schools would be *not cumulatively considerable*.

Regarding parks, it is expected that new or expanded parks facilities would be planned for and constructed within each of the affected counties as needed to meet the demands of growth planned under their respective general plans. It is expected that any impacts resulting from such new or expanded park facilities would be mitigated to less-than-significant levels. Therefore, the far-term cumulative impacts to with respect to parks would be *less than significant*. As discussed under Impact PS-3, above, the WSP gen-tie facilities would not require or contribute to the need for new or expanded parks, and therefore would have no impact with respect to parks. Therefore, the far-term impact of the WSP gen-tie facilities upon parks would be *not cumulatively considerable*.

As discussed under Impact PS-3 above, the WSP gen-tie projects would result in no increase in demand for social services, courts, hospitals, libraries, or other public facilities, and thus would have no impact in terms of requiring new or expanded facilities for such services. Therefore, the far-term impact of the WSP gen-tie projects other public services would be *not cumulatively considerable*.

In summary, the cumulative impact of upon public services associated with the construction and operation of the WSP gen-tie facilities under both near-term and far-term cumulative conditions would be *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

REFERENCES/BIBLIOGRAPHY – PUBLIC SERVICES

CalFire 2007a — California Department of Forestry and Fire Protection (CDF). 2007. *Fire Hazard Severity Zones in SRA (State Responsibility Area) – Kings County* (Map). Adopted November 7, 2007. http://frap.cdf.ca.gov/webdata/maps/kings/fhszs_map.16.pdf

CalFire 2007b — California Department of Forestry and Fire Protection (CDF). 2007. *Fire Hazard Severity Zones in LRA (Local Responsibility Area) – Kings County* (Map). September 20, 2007. http://frap.cdf.ca.gov/webdata/maps/kings/fhszl06_1_map.16.pdf

CalFire 2007c — California Department of Forestry and Fire Protection (CDF). 2007. *State Responsibility Areas and Facilities* (Map). February 8, 2007. http://cad.chp.ca.gov/HTM.Net/locations.htm

CHP 2017 — California Highway Patrol (CHP). 2017. *CHP Area Office Address Listings*. http://cad.chp.ca.gov/HTM.Net/locations.htm

FCFPD 2016 — Fresno County Fire Protection District (FCFPD). 2016. *Operations Division Overview*. http://fresnocountyfire.org/index.php?c=10

FCSD 2016 — Fresno County Sheriff's Department (FCSD). 2016. *Area 1 Profile*. http://www.fresnosheriff.org/area-1.html

Fresno County 2000b — County of Fresno. 2000. *Fresno County 2000 General Plan –Policy Document*. October. http://www2.co.fresno.ca.us/4510/4360/General_Plan/GP_Final_policy_doc/Table_of_Contents_rj_blue.pdf

Fresno County 2016 — County of Fresno. 2016. *Fresno County Code of Ordinances*. As amended through April 26, 2016. https://www.municode.com/library/ca/fresno_county/codes/code_of_ordinances

Fry 2016 — Fry, Steve, Administrative Commander, Kings County Sheriff's Department. 2015. *Telephone Communication with Bert Verrips, AICP, Environmental Consulting*. September 28, 2016.

Jones 2016 — Jones, Brandon, Battalion Chief/Fire Marshal, Kings County Fire Department (KCFD). *Telephone Communication with Bert Verrips, AICP, Environmental Consulting*. September 27, 2016.

KCFD 2016 — Kings County Fire Department Webpage. http://www.countyofkings.com/departments/fire-department

Kings County 1998 — Kings County. 1998. *Kings County Building Ordinance, Chapter 5 – Kings County Code of Ordinances*. Adopted by Ordinance No. 567, January 15, 1998. http://www.countyofkings.com/home/showdocument?id=4068

Kings County 2003 — Kings County. 2003. *County of Kings Improvement Standards*. May 6, 2003. http://www.countyofkings.com/home/showdocument?id=3098

Kings County 2009c — Kings County. 2009. *Final EIR – 2035 Kings County General Plan Update*. October. http://www.countyofkings.com/home/showdocument?id=5897

Kings County 2010a — County of Kings. 2010. *2035 Kings County General Plan – Land Use Element*. Adopted January 26, 2010. http://www.countyofkings.com/home/showdocument?id=3110

Kings County 2010c — County of Kings. 2010. *2035 Kings County General Plan – Health and Safety Element*. Adopted January 26. http://www.countyofkings.com/home/showdocument?id=3118

OAG 2017 — California Department of Justice, Office of the Attorney General (OAG). 2017. *CJSC Statistics: Arrests*. May. https://oag.ca.gov/crime/cjsc/stats/arrests

3.13. TRANSPORTATION/TRAFFIC

3.13.1. ENVIRONMENTAL SETTING

Westlands Solar Park

The WSP plan area is located entirely within the unincorporated area of Kings County. The plan area is located generally south of State Route (SR)-198, west of SR-41, and east of the Fresno County line. The roadway network providing access to the WSP plan area is described below.

Major Highways

State highways in the vicinity that serve the plan area include SR-198 located 2 miles north, SR-41 located 0.5 to 3 miles east, SR-43 located 17 miles northeast, SR-269 located 5 miles west, and Interstate 5 located 8 miles southwest (see Figure TR-1). All State highways in the vicinity that provide regional access to the WSP plan area currently operate at acceptable levels of service (i.e., LOS B or C). Levels of Service range from "A" to "F" with "A" representing the highest level of service and "F" representing the lowest and unacceptable level of service. (See Section *3.13.3. Environmental Impact Analysis* for definitions of Levels of Service.)

Local Roads

The Kings County roads serving the WSP plan area include: Avenal Cutoff Road, which bisects the plan area from northeast to southwest, and provides connection to SR-198 to the northeast and I-5 to the southwest; 25th Avenue, which connects Avenal Cutoff Road to SR-198 to the north; Laurel Avenue, which serves the northeast portion of the plan area and connects Avenal Cutoff Road to SR-41 to the east; and Nevada Avenue, which serves the south-central portion of the plan area and connects Avenal Cutoff Road to SR-41 to the east. All Kings County roads serving the WSP plan area currently operate at acceptable LOS B or C.

The Fresno County roads serving the plan area include: Gale Avenue, which connects Avenal Cutoff Road to SR-269 to the west; and Jayne Avenue, which is the westward extension of Nevada Avenue in Fresno County and connects Avenal Cutoff Road to SR-269 and I-5 to the west. All Fresno County roads providing access to the WSP plan area currently operate at acceptable LOS B or C.

Airports

The public use airports that are nearest to the WSP plan area include: Hanford Municipal (16 miles northeast), Coalinga Municipal (15 miles west), and Harris Ranch Airport (15 miles northwest). The airfield at Naval Air Station Lemoore (NASL) is located 5.5 miles north of the project site. There are 6 private airstrips within a 5-mile radius of the site, two of which are located in proximity to the plan area (at Shannon Ranch and Stone Land Company Ranch).

Public Transit

The Kings Area Rural Transit (KART) operates two bus routes in the WSP vicinity. These include the Hanford to Avenal Route, which follows SR-41 to the east of WSP, and the Hanford to NAS Lemoore Route, which follows SR-198 to the north of WSP.

Non-Motorized Transportation

The nearest existing bikeway runs along the Avenal Cutoff Road through the WSP plan area, and extends from SR-198 in the north to Avenal the south. The Regional Bike Routes plan in the *2035 Kings County General Plan Circulation Element* shows a planned bikeway along Nevada Avenue between Avenal Cutoff Road and SR-41 within the WSP plan area (KC 2010d).

WSP Gen-Tie Corridors

The WSP Gen-Tie Corridors extend for a total distance of 23.0 miles, most of which is located in the unincorporated area of Fresno County, with relatively short segments of both the north and south gen-ties extending east into Kings County. The main roadways in the vicinity of the WSP Gen-Tie Corridors are described below and shown in Figure 7 in Chapter *2. Project Description*.

Major Highways

The primary State highway in the vicinity is SR-269, which is crossed by both gen-tie corridors on their approach to the Gates Substation. Other State highways in the vicinity that provide regional access to the gen-tie corridors include I-5, SR-198, and SR-41, all of which currently operate at acceptable levels of service (i.e., LOS B or C)(Fresno COG 2014, Kings Co 2010d). (See Section *3.13.3. Environmental Impact Analysis* for definitions of Levels of Service.)

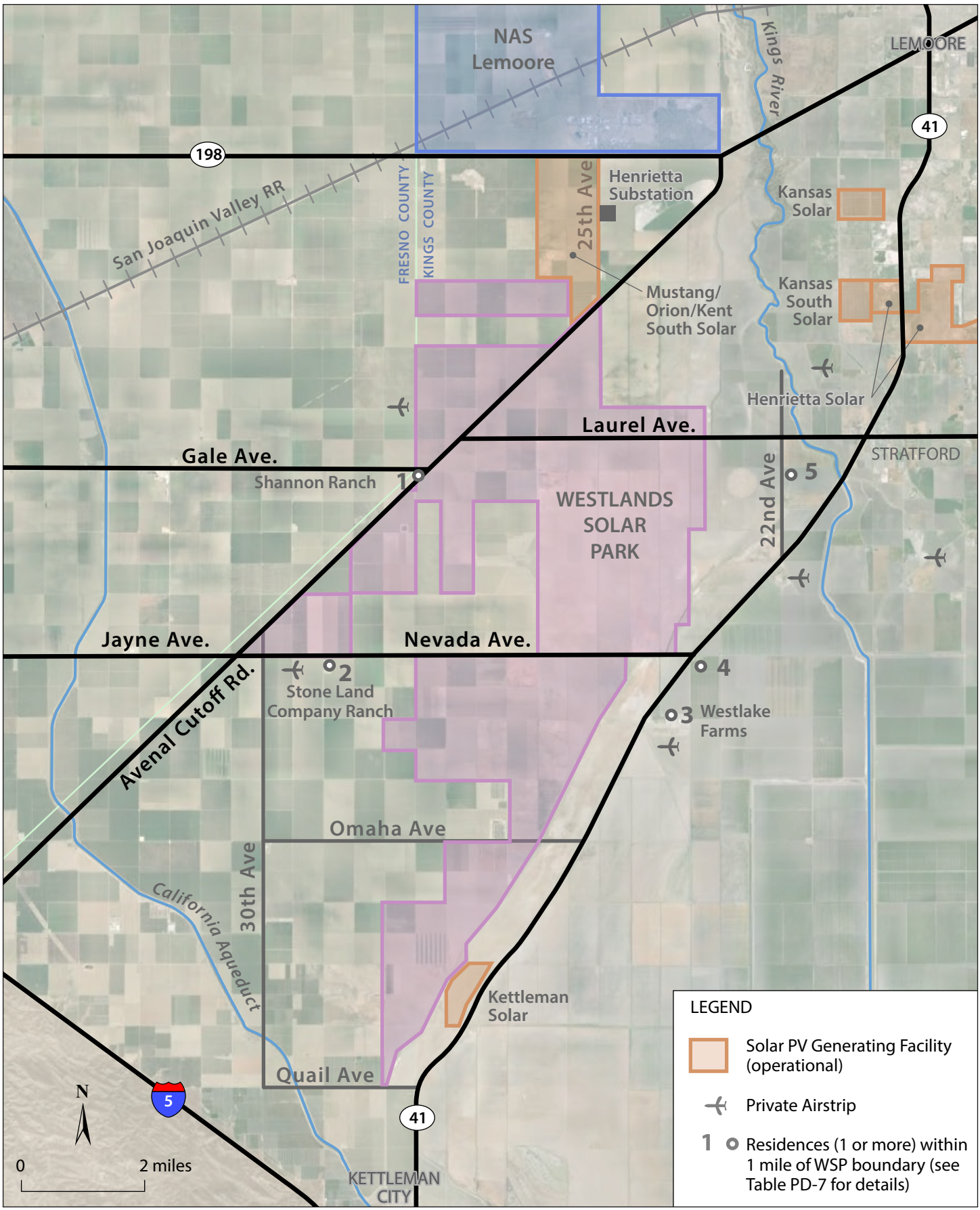
Local Roads

The main Kings County roads in the vicinity of the gen-tie corridors include Avenal Cutoff Road and Nevada Avenue, which currently operate at acceptable LOS C and LOS B, respectively (Kings County 2010d).

The main Fresno County roads in the vicinity of the gen-tie corridors include Gale Avenue and Jayne Avenue, which operate at LOS A and LOS B, respectively (Fresno COG 2014).

Airports

The nearest municipal airports to the WSP Gen-Tie Corridors include the Hanford and Coalinga, which are located between 6 and 20 miles from the transmission corridors at their nearest points. The only other public use airport is the Harris Ranch Airport, which is located 10 miles northwest of the WSP Gen-Tie Corridors at SR-198 and I-5. The airfield at Naval Air Station Lemoore (NASL) is located 5.0 miles north of the northern gen-tie corridor. There are a total of 5 private airstrips within 7 miles of the WSP Gen-Tie Corridors, two of which are located adjacent to the WSP plan area (at Shannon Ranch and Stone Land Company Ranch), with the remaining 3 located to the east of the WSP plan area in Kings County.



Base map: Google Earth, 2016

WSP Vicinity - Roadways

Figure TR-1

This page intentionally left blank

Public Transit

The Kings Area Rural Transit (KART) operates two bus routes in the WSP Gen-Tie Corridors vicinity. These include the Hanford to Avenal Route, which follows SR-41 to the east of WSP, and the Hanford to NAS Lemoore Route, which follows SR-198 to the north of WSP. The Fresno County Rural Transit Agency (FCRTA) operates the Coalinga-Avenal-Huron route in the vicinity of the western ends of the WSP Gen-Tie Corridors.

Non-Motorized Transportation

In Kings County, there is an existing bike route along Avenal Cutoff Road that extends from SR-198 to I-5, and a planned bike route along Nevada Avenue between SR-41 and Avenal Cutoff Road (Kings County 2010d). In Fresno County, there are existing and planned bikeways along Jayne Avenue, SR-269, and the San Joaquin Railroad right-of-way in the vicinity of the Westlands Transmission Corridors (Fresno County 2000b).

3.13.2. REGULATORY CONTEXT

State

California Vehicle Code

Various sections of the California Vehicle Code (CVC) apply to the WSP solar facilities and Westlands transmission corridors. CVC Section 35550 imposes weight guidelines and restrictions upon vehicles traveling on State freeways and highways, and requires heavy haulers to obtain permits from Caltrans prior to delivery of any heavy haul load. CVC Section 35780 requires that haulers of oversized or excessive loads over State highways obtain a "Single-Trip Transportation Permit" from Caltrans prior to delivery of any oversized load. Oversize/overweight permits are considered on a case-by-case basis but may include requirements such as California Highway Patrol escort, special speed limits, and other restrictions. The CVC also contains various regulations governing the transportation of hazardous materials on State highways.

California Streets and Highways Code

Section 117 of the California Streets and Highways Code requires that permits be obtained from Caltrans for placement within the State right-of-way of any structures or fixtures such as utility poles, pipes, ditches, drains, sewers, or other above-ground or underground structures. Other sections of the Streets and Highways Code require the issuance of encroachment permits for work within the rights-of-way of State or county roadways.

Kings County

Kings County Regional Transportation Plan

The 2014 Kings County Regional Transportation Plan (RTP), prepared by the Kings County Association of Governments (KCAG), contains goals and objectives for State highways, major local routes of significance, alternative transportation modes, and strategies for transportation and demand management (KCAG

2014). Since KCAG is a metropolitan planning organization, and not a Transportation Management Agency (TMA), it is not required to adopt Transportation Systems Management (TSM) measures or a Congestion Management Plan (CMP) as is required for larger urbanized areas.

Kings County General Plan

The 2035 Kings County General Plan contains the following goals, objectives and policies related to transportation facilities which are relevant to the Westlands Solar Park.

Circulation Element

A. Countywide Circulation

C GOAL C1 *Provide a coordinated countywide circulation system with a variety of safe and efficient transportation alternatives and modes that interconnect cities, community districts, adult education facilities, and adjoining cities in neighboring counties, and meets the growing needs of residents, visitors and businesses*.

C OBJECTIVE C1.3 *Maintain an adequate Level of Service operation for County roadways and ensure proper maintenance occurs along critical routes for emergency response vehicles*.

C Policy C1.3.1: Maintain and manage County roadway systems to maintain a minimum Level of Service Standard "D" or better on all major roadways and arterial intersections.

C Policy C1.3.2: Require proposed developments that have the potential to generate 100 peak hour trips or more to conduct a traffic impact study that follows the most recent methodology outlined in Caltrans Guide to the Preparation of Traffic Impact Studies.

C Policy C1.3.5: Require new development to pay its fair share of costs for street and traffic improvements based on traffic generated and its impact to traffic levels of service.

C Policy C1.3.6: Require dedication of right of way to county standards for all new development projects.

C Policy C1.3.7: Require new development to respect existing precise plan lines or ultimate right of way lines dedication of right of way as a condition of development approval.

C OBJECTIVE C1.3 *Promote Public Transit and vanpooling within the County urbanized areas to increase ridership and decrease traffic demand on County roadways*.

C Policy C1.3.3: Encourage and support the enhancement and marketing of transit and vanpool services as a viable transportation alternative and transportation control measure to improve air quality.

Kings County Improvement Standards

The Kings County Improvement Standards serves as an engineering reference for Kings County staff and private parties in the design and construction of improvements for public works projects and private development improvements. The standards include engineering design specifications for the construction of streets, water supply systems, storm drainage, and sewage disposal.

Fresno County

Fresno County General Plan

The Fresno County General Plan contains the following goals and policies related to transportation facilities which are relevant to the Westlands Solar Park and Westlands Transmission Corridors.

Circulation Element

A. Streets and Highways

Goal TR-A *To plan and provide a unified, coordinated, and cost-efficient countywide street and highway system that ensures the safe, orderly, and efficient movement of people and goods*.

Policy TR-A.2 The County shall plan and design its roadway system in a manner that strives to meet Level of Service (LOS) D on urban roadways within the spheres of influence of the cities of Fresno and Clovis and LOS C on all other roadways in the county.

*

*

In no case should the County plan for worse than LOS D on rural County roadways, worse than LOS E on urban roadways within the spheres of influence of the cities of Fresno and Clovis, or in cooperation with Caltrans and the Council of Fresno County Governments, plan for worse than LOS E on State highways in the county.

Fresno County Regional Transportation Plan

The Fresno County 2014 Regional Transportation Plan (RTP), prepared by the Fresno Council of Governments (Fresno COG), contains goals and objectives for State highways, major local routes of significance, planning and financing of roadway improvements, alternative transportation modes, and strategies for transportation and demand management within Fresno County. The RTP also includes the Sustainable Communities Strategy and Congestion Management Process (CMP) for Fresno County (Fresno COG 2014).

Fresno County Congestion Management Process

The Fresno COG's 2009 Congestion Management Process is intended to provide for the regional management of traffic congestion through integrated multi-modal transportation system planning and management that is integrated with the land use planning process to reduce regional vehicle miles traveled and improve regional air quality. The CMP process monitors traffic conditions on the Regionally Significant Road System, consisting of state highways and major county roads, and applies locally adopted Level of Service standards as the performance measures for the transportation system (Fresno COG 2014).

3.13.3. ENVIRONMENTAL IMPACT ANALYSIS

SIGNIFICANCE CRITERIA

Based on the State CEQA Guidelines, Appendix G, the WSP solar development and the transmission projects would be considered to result in a significant transportation/traffic impact if they would:

a. Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including, but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit? (Impacts TR-1 and TR-6)

b. Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the congestion management agency for designated roads or highways? (Impact TR-2)

c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks? (Impact TR-3)

d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? (Impact TR-4)

e. Result in inadequate emergency access? (Impact TR-5)

f. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities? (Impact TR-6)

Level of Service Standards

As discussed in Section *3.13.2. Regulatory Context*, the primary measure of performance effectiveness by the applicable affected counties and Caltrans is the Level of Service standard. Levels of Service range from "A" to "F", with "A" representing free flow and "F" being heavily congested. The traffic conditions associated with each service level are described in the following table.

Level of Service Descriptions – Roadways

Level of Service (LOS)	Traffic Flow Characteristics
A	Traffic flows freely with little or no restrictions on maneuverability. No delays.
B	Traffic flows freely, but drivers have slightly less freedom to maneuver. No delays.
C	Density becomes noticeable with ability to maneuver limited by other vehicles. Minimal delays.
D	Speed and ability to maneuver is severely restricted by increasing density of vehicles. Minimal delays.
E	Unstable traffic flow. Speeds vary greatly and are unpredictable. Minimal delays.
F	Traffic flow is unstable, with brief periods of movement followed by forced stops. Significant delays.

Source: Caltrans 2010.

The California Department of Transportation (Caltrans) endeavors to maintain a target LOS at the transition between LOS C and LOS D, while lower LOS is accepted in areas of existing congestion, such as urban highways segments (Caltrans 2002). Kings, Fresno, and Merced counties have established LOS D as the minimum acceptable level of service on their roadways (Kings County 2010d; Fresno COG 2014; MCAG 2014). The traffic generated by WSP solar development would conflict with an established measure of effectiveness if it resulted in a degradation of Level of Service to lower than LOS C on a State Highway, or lower than LOS D on a County Road.

IMPACTS AND MITIGATION

Impact TR-1. Conflict with Transportation Plan or Level of Service Policy

***Westlands Solar Park*. The WSP solar facilities would increase traffic during construction and operation; however, the traffic volumes would not result in exceedance of applicable policies establishing acceptable levels of service or measures of effectiveness. (*Less-than-Significant Impact*)**

***WSP Gen-Tie Corridors*. The WSP Gen-Tie projects would increase traffic during construction and operation; however, the traffic volumes would not result in exceedance of applicable levels of service standards or measures of effectiveness. (*Less-than-Significant Impact*)**

This impact analysis addresses significance criterion 'a' above.

Westlands Solar Park

For State highways and County roads, the relevant measure of effectiveness for performance is the Level of Service (LOS) standard. The California Department of Transportation (Caltrans) endeavors to maintain a target LOS at the transition between LOS C and LOS D, while lower LOS is accepted in areas of existing congestion, such as urban highways segments (Caltrans 2002). Both Kings County and Fresno County have established LOS D as the minimum acceptable level of service on their roadways (Kings County

2010d; Fresno COG 2014). The traffic generated by WSP solar development would conflict with an established measure of effectiveness if it resulted in a degradation of Level of Service to lower than LOS C on a State Highway, or lower than LOS D on a County Road.

Scope of Traffic Evaluation

This program-level evaluation is intended to provide general overview of potential traffic impacts commensurate with the level of detail currently available on the Westlands Solar Park. Since WSP solar projects have not yet been defined, this evaluation does not address potential traffic impacts associated with specific solar projects within Westlands Solar Park. Each individual WSP solar project will be subject to a project-specific traffic impact analysis to be prepared in conjunction with the project-specific environmental review required at the time of subsequent Conditional Use Permit review by Kings County. The purpose of this analysis is to evaluate the overall traffic impacts associated with the development of the Westlands Solar Park as a whole. This evaluation is based on worst-case assumptions regarding scale and pacing of WSP buildout, and the calculations are confined to daily traffic volumes on affected roadway segments. While this evaluation is based on a hypothetical scenario (described below), it has value at a programmatic level since it provides an indication of the general level of traffic impacts that can be expected on the roadway network under worst-case conditions during WSP buildout. A more specific evaluation, involving a fine grained analysis of peak hour level of service impacts at intersections, would not be appropriate or meaningful since the analytical results would be based on hypothetical scenario and thus would be too speculative to be of value for defining project-specific impacts or mitigation measures.

Traffic evaluations were performed on two scenarios, one reflecting near-term conditions during the early stages of WSP development, and the other reflecting far-term conditions in the latter stages of WSP buildout. The results of these evaluations are presented below.

Near-Term Conditions

As is typical of all PV solar development, the PV solar projects constructed within the Westlands Solar Park would generate substantially greater volumes of traffic during construction than during project operations. During construction, substantial numbers or workers would be onsite during site preparation, grading, panel installation, and electrical equipment installation. The construction period is also when the greatest number of truck deliveries would be made, including deliveries of grading and construction equipment, solar panels, racking systems, electrical equipment, gravel, asphalt, and concrete, among other materials.

Under near-term conditions, it is assumed that no SGFs are operational, so all traffic is generated by construction activity. A screening level of analysis was conducted to determine if adverse impacts to roadway system performance would occur, even under temporary conditions during project construction. Since the schedule for development of individual WSP solar projects through 2030 has not been determined, this analysis assumes reasonable worst-case project conditions regarding sequencing and size of solar projects as the basis of the traffic evaluation. For purposes of this evaluation, it was assumed that two solar projects with generating capacities of 250 MW each would be completed in consecutive years. As described in *Chapter 2. Project Description*, it is expected that a 250 MW solar facility would be the largest SGF constructed within WSP. The pace of construction of solar projects can vary widely depending on contract obligations and other factors. The construction of a 250 MW SGF could take as long as 3 years, or the schedule could be expedited for completion in 18 months or less.

For purposes of this analysis, a construction period of 2 years was assumed. It is further assumed that two solar projects of 250 MW would be completed in consecutive years, which would require overlapping construction schedules. Under this scenario, the first SGF would begin construction at the beginning of year 1 and be completed at the end of year 2; while the second SGF would start construction at the beginning of year 2 and be completed at the end of year 3, such that both SGFs would be under construction throughout year 2. The construction schedule for a typical 250-MW solar facility is shown in Table PD-2 in Chapter *2. Project Description*. With overlapping construction schedules, Phases 2 and 3 of project 1 would overlap with each over and with Phase 1 of project 2 for a period of 4 months in the middle of year 2. This period represents the peak level of construction activity that is expected to occur at any time during buildout of Westlands Solar Park. [Note: Although one of the two WSP switching stations (if needed) could also start construction at the beginning of year 1, it would be completed before the end of year 1, so no portion of its construction schedule would occur in the middle of year 2 when the peak SGF construction occurs under this scenario.]

The estimated number of construction workers and off-site vehicles and equipment used for each construction phase for a 250 MW project are also shown in Table PD-2. As indicated in the table, approximately 470 workers are expected to commute to and from the construction sites during this peak construction period, resulting in a total of 940 daily trips (inbound and outbound). For purposes of analysis, it was assumed that no workers would carpool, although some carpooling is anticipated under actual conditions.

During brief periods, construction activity would intensify and result in traffic volumes up to 1.5 times the average. However, such days are expected to be unusual, and the potential for such peak days to occur simultaneously at all three overlapping construction phases would be very small. Since such a scenario would occur rarely, if at all, it is not suitable for analysis of reasonable worst-case traffic impacts.

Project worker commute traffic was distributed to the roadway system in accordance with a gravity model that considered time and distance factors relative to regional population centers to determine directional trip assignments. The average daily truck deliveries were estimated for the peak construction period (i.e., 48 deliveries) and were similarly distributed according to place of origination for each type of delivery. In order to reflect the effect of trucks on highway capacity, all truck trips were multiplied by 1.5 to derive Passenger Car Equivalent (PCE) trips generated by trucks, per Caltrans guidance. Deliveries were also multiplied by two to reflect inbound and outbound trips. Thus the average daily PCE truck trips were calculated to total 144 trips, bringing the total peak traffic generation to 1,084 daily trips when worker trips (above) are added. In addition, the two 250-MW solar projects were assumed to be located adjacent to each other, so their combined traffic effects on any particular roadway segment would not be diluted by distance separation. The assumed location of the adjacent projects is in the eastern portion of the WSP plan area, generally between Laurel Avenue on the north and Nevada Avenue on the south. These are shown in Figure PD-3 (in Chapter *2. Project Description*) as SGFs 2 and 3.

TABLE TR-1
NEAR-TERM TRAFFIC CONDITIONS – WSP CONSTRUCTION
(BASED ON TWO 250 MW SGFS WITH OVERLAPPING CONSTRUCTION)

Roadway Segment[1]	Near-Term Conditions				Next LOS Transition (AADT/LOS)[6]	Avg. Daily Trips[7]	LOS with Project	LOS Impact Threshold[8] (Impact?)
	AADT[2]		Roadway Lanes (Agency)[4]	LOS[5]				
	Existing	Baseline[3] (2018)						
Avenal Cutoff Road								
- b/n SR-198 & Nevada/Jane	5,150[6]	5,359	2 (KC)	C	13,800/D	433	C	D/E (No)
- b/n Nevada/Jane & SR-269/I-5	3,000[6]	3,122	2 (KC)	B	4,200/C	85	B	D/E (No)
Laurel Avenue								
- b/n Avenal Cutoff & SR-41	910[6]	947	2 (KC)	B	4,200/C	775	B	D/E (No)
Lincoln/Gale Avenues								
- b/n Avenal Cutoff & SR-269	1,680[9]	1,748	2 (FC)	B	4,200/C	56	B	D/E (No)
SR-198								
- b/n Avenal Cutoff & SR-41	18,000[9]	18,545	4 (fwy)(CT)	B	39,600/C	236	B	C/D (No)
- b/n SR-41 & 18th Ave.	20,000[8]	20,606	4 (fwy)(CT)	B	39,600/C	244	B	C/D (No)
SR-41								
- b/n SR-198 & Bush St.	16,500[9]	17,000	4 (fwy)(CT)	B	39,600/C	435	B	C/D (No)
- b/n SR-198 & Jackson Ave.	12,500[9]	12,879	2 (CT)	C	13,800/D	444	C	C/D (No)
- b/n Jackson & Nevada Aves.	9,000[9]	9,273	2 (CT)	C	13,800/D	518	C	C/D (No)
- b/n Nevada & Bernard Aves.	6,900[9]	7,109	2 (CT)	C	13,800/D	43	C	C/D (No)
- b/n Bernard Ave. & I-5	20,000[9]	20,812	4 (CT)	B	29,300/C	43	B	C/D (No)
Nevada/Jayne Avenues								
- b/n SR-41 & Avenal Cutoff	390[6]	406	2 (KC)	B	4,200/B	292	B	D/E (No)
- b/n Avenal Cutoff & SR-269	2,890[10]	3,007	2 (FC)	B	4,200/B	267	B	D/E (No)
- b/n SR-269 & I-5	3,450[10]	3,590	2 (FC	B	4,200/C	251	B	D/E (No)
- b/n I-5 & SR-33	5,820[10]	6,365	2 (FC)	C	13,800/D	251	C	D/E (No)

[1] Includes only roadway segments with >50 project-generated ADT (i.e., >25 round trips per day).
[2] AADT = Annual Average Daily Trips (= existing traffic volumes on roadways and highways).
[3] Existing AADT was increased by 1% per year from count year to Baseline Year (2018).
[4] Agency abbreviations: KC = Kings County; CT = Caltrans; FC = Fresno County.
[5] Sources: Kings County 2010d; Caltrans 2002; Fresno COG 2013.
[6] Source: Kings County 2010d. [Note: Overall traffic volumes did not increase between 2006 and 2014; see text for discussion.]
[7] Project Daily Trips: Average Day = Average daily trips generated during the peak construction period.
[8] Minimum LOS Standards by Agency: Kings County = LOS D; Caltrans = LOS C; Fresno County = LOS D.
[9] Source: Caltrans 2011, 2016.
[10] Source: Fresno COG 2013 (reflects 2011 and 2012 counts).

Table TR-1 shows the effect of project construction traffic on the surrounding roadway network. Table TR-1 includes only those roadway segments that would be subject to 50 or more daily project-generated trips (or 25 round trips per day). All other roadway segments would receive fewer than 50 daily trips from construction traffic under the assumed conditions.

In Table TR-1, the existing condition is represented by the latest year for which traffic count data is available for the each of the study roadway segments. These latest count dates range from 2009 to 2015. For Kings County, existing traffic on Kings County roads is from 2006 count data, the most recent available. Caltrans data on statewide traffic volume trends indicates that overall traffic volumes in 2014 were approximately the same as 2006 traffic volumes, reflecting no appreciable change in overall volumes statewide over that 8-year period (Caltrans 2012, 2015). It is assumed that local conditions reflect these statewide trends, such that the Kings County data from 2006 can be considered a reasonable representation of 2014 conditions.

In order to establish Baseline traffic conditions on the study roadways for 2018, the existing count data for each roadway segment was increased by 1 percent per year from its latest count date. This growth rate is somewhat higher than the statewide increase in traffic volumes on State highways (i.e., average annual increase of 0.6 percent over the 10 year period from 2005 and 2015).

As shown in Table TR-1, none of the affected roadway segments would be subject to an LOS impact, or even a change in Level of Service, as a result of WSP solar development in the near-term. The most heavily affected roadways, Laurel Avenue and Nevada Avenue within the WSP plan area, would be temporarily subject to increases of 82 percent and 72 percent of daily traffic volumes, respectively, during the brief four-month period of peak construction activity under the reasonable worst-case scenario; however, the LOS on those roadways would remain well within acceptable LOS B under these traffic conditions. Both of these roadway segments would experience relatively large increases in traffic volumes due to their locations adjacent to the WSP solar projects under the near-term traffic scenario. All other roadways would be subject to temporary traffic increases ranging from less than 1 percent to 9 percent. None of the affected roadway segments would be subject to a change in LOS or a significant LOS impact under near-term conditions. Therefore, it is concluded that solar development within WSP would result a *less-than-significant* impact on the operational effectiveness of the affected roadways during the buildout of the Westlands Solar Park.

Far-Term Conditions

To determine the potential traffic impacts of WSP solar development under far-term conditions, the traffic evaluation considered a 2030 scenario where the WSP would be almost built-out, and most SGFs would be operational, but the final SGF would still be under construction. To represent reasonable worst-case conditions, it was assumed that almost the entire 2,000 MW of solar development would be operational, and that the final 250 MW would still be under construction. Specifically, it was assumed that there would be two adjacent 250 MW solar projects with overlapping construction schedules, as described for near-term conditions above, and that peak construction activity would occur over a 4 month period in mid-2030. The operational traffic inputs are based on the average worker trips and daily deliveries described in Chapter *2. Project Description*, and the construction inputs are the same as presented above for the near-term analysis.

The baseline for the 2030 traffic scenario is based on future traffic projections for the affected roadways in Kings and Fresno counties. The baseline 2030 traffic volumes for Kings County roadways are from the Kings County General Plan Circulation Element. Although the Circulation Element uses 2035 as the horizon year, these volumes are considered a valid representation, albeit a conservative one, for 2030. Similarly, 2030 volumes for Fresno County roadways were based on the Fresno County Regional Transportation Plan (RTP) which uses 2040 as a horizon year. Therefore, the baseline volumes shown for Fresno County roadways also represent the upper bound of expected baseline volumes for 2030, which likely would actually be significantly lower. The results of the far-term evaluation are shown in Table TR-2 on the next page.

As shown in Table TR-2, none of the affected roadway segments would be subject to an LOS impact, or even a change in Level of Service, as a result of WSP solar development in the farm-term. The most heavily affected roadways, Laurel Avenue and Nevada Avenue within the WSP plan area, would be temporarily subject to increases of 81 percent and 41 percent of daily traffic volumes, respectively, during the period of combined peak construction activity under the worst-case scenario; however, the LOS on those roadways would remain well within acceptable LOS B under these traffic conditions. Both of these roadway segments would experience relatively large increases in traffic volumes due to their locations adjacent to the WSP solar projects that would be under construction. All other roadways would be subject to temporary traffic increases ranging from less than 1 percent to 5 percent. None of the affected roadway segments would be subject to a change in LOS or a significant LOS impact under far-term conditions. Therefore, WSP solar development would result a *less-than-significant* impact on the operational effectiveness of the affected roadways under temporary far-term conditions with combined peak construction activities and fully operational SGFs under WSP near-buildout conditions.

Post-Construction Far-Term Traffic

Once the WSP construction is completed and all solar facilities are fully operational, the traffic volumes generated at WSP would become very light. As described in Chapter *2. Project Description*, an average of 10 workers would travel to a typical 250-MW SGF on any given workday during a typical year. This translates to an overall average of about 80 workers throughout the WSP on any given workday, generating 160 daily trips in total. Specifically, up to 3 personnel would visit each SGF daily to perform inspections, maintenance and repairs, and crews of up to 20 personnel would occasionally be present to perform larger repair and equipment replacement tasks. Panel washing crews with about 25 workers would be on each SGF for about 8 weeks per year, and up to 3 sheep herders would be on each site during the spring to manage sheep grazing. There would also be an average of about 10 daily truck deliveries for replacement parts and other materials. Throughout the WSP, there would be a total of about 80 truck deliveries, or 160 daily truck trips in total. This would be the equivalent to 240 passenger vehicle trips (i.e., each truck trip is equivalent to 1.5 passenger vehicle trips). In total, the fully operational SGFs would generate about 400 daily trips (i.e., 160 worker trips and 240 PCE truck trips). The most affected roadways, Laurel Avenue and Nevada Avenue within the WSP plan area, would be subject to increases of 12 percent and 5 percent of daily traffic volumes, respectively. These roadway segments would still operate at LOS B after all WSP solar facilities are fully operational. Traffic volumes on Avenal Cutoff Road through the project area would increase by 1.5 percent at WSP buildout, but the service level would remain at LOS C, well within acceptable range. All other roads would be subject to a less than 1 percent increase in daily traffic volumes, and no roadway segments would be subject to a change in LOS or an LOS impacts as a result of full WSP operations. Overall, the very low volume of traffic generated during WSP operations would have a negligible effect on the performance of the surrounding

roadway system. Therefore, the traffic impact of SGF operations after WSP buildout would be *less than significant*.

TABLE TR-2
FAR-TERM (2030) TRAFFIC CONDITIONS – WSP CONSTRUCTION + OPERATIONS
(BASED ON TWO 250 MW SGFS WITH OVERLAPPING CONSTRUCTION + FULL WSP OPERATION)

Roadway Segment[1]	2030 Baseline Conditions			Next LOS Transition (AADT/LOS)[5]	Average Daily Trip Generation			LOS with Project	LOS Impact Threshold[7] (Impact?)
	AADT[2]	Roadway Lanes (Agency)[3]	LOS[4]		Construc-tion Trips	Operat-ional Trips	Total Trips		
Avenal Cutoff Road									
- b/n SR-198 & Nevada/Jane	10,770[5]	2 (KC)	C	13,800/D	433	80	513	C	D/E (No)
- b/n Nevada/Jane & I-5	10,770	2 (KC)	C	13,800/D	85	19	104	C	D/E (No)
Laurel Avenue									
- b/n Avenal Cutoff & SR-41	1,030[5]	2 (KC)	B	4,200/C	775	55	830	B	D/E (No)
Lincoln/Gale Avenues									
- b/n Avenal Cutoff & SR-269	3,360	2 (FC)	B	4,200/C	56	6	62	B	D/E (No)
SR-198									
- b/n Avenal Cutoff & SR-41	43,990[5]	4 (fwy)(CT)	C	55,200/D	236	42	278	C	C/D (No)
- b/n SR-41 & 18th Ave.	54,820[5]	4(fwy)(CT)	C	55,200/D	244	29	273	C	C/D (No)
SR-41									
- b/n SR-198 & Bush St.	43,840[5]	4 (fwy)(CT)	C	55,200/D	435	75	510	C	C/D (No)
- b/n SR-198 & Jackson Ave.	19,340[5]	4 (CT)[9]	B	29,300/C	444	66	510	B	C/D (No)
- b/n Jackson & Nevada Aves.	13,370[5]	4 (CT)[9]	B	29,300/C	518	25	543	B	C/D (No)
- b/n Nevada & Bernard Aves.	13,260[5]	4 (CT)[9]	B	29,300/C	43	27	70	B	C/D (No)
- b/n Bernard Ave. & I-5	13,940[5]	4 (CT)[9]	B	29,300/C	43	27	70	B	C/D (No)
Jayne/Nevada Avenues									
- b/n SR-41 & Avenal Cutoff	880[5]	2 (KC)	A/B	4,200/B	292	72	364	B	D/E (No)
- b/n Avenal Cutoff & SR-269	5,780[8]	2 (FC)	C	13,800/D	267	16	283	C	D/E (No)
- b/n SR-269 & I-5	7,220[8]	2 (FC	C	13,800/D	251	16	267	C	D/E (No)
- b/n I-5 & SR-33	10,560[8]	2 (FC)	C	13,800/D	251	3	254	D	D/E (No)

[1] Includes only roadway segments with >50 project-generated ADT (i.e., >25 round trips per day).
[2] AADT = Annual Average Daily Trips (= traffic volumes on roadways and highways).
[3] Agency abbreviations: KC = Kings County; CT = Caltrans; FC = Fresno County.
[4] Sources: Kings County 2010d; Caltrans 2002; Fresno COG 2013.
[5] Source: Kings County 2010d.
[6] Project Daily Trips: Average Day = Average daily trips generated during the peak construction period.
[7] Minimum LOS Standards by Agency: Kings County = LOS D; Caltrans = LOS C; Fresno County = LOS D.
[8] Source: Fresno COG 2013. (No COG data is available for 2030; AADT for 2030 estimated by doubling 2014 volumes, roughly in line with agency projections for other road segments.)
[9] Source: Caltrans 2013.

Decommissioning Traffic

As discussed in Chapter *2. Project Description*, the level of activity during project decommissioning (or deconstruction) is expected to be similar to the activity level during project construction. Thus the number transport vehicle trips required for off-haul of decommissioned materials is expected to be similar to the number of trips required to haul the materials to each SGF site during construction. The number of workers required on-site is also expected to be about the same, while the use of construction equipment would be similar or a little less. For purposes of analysis, it is assumed that traffic generated during decommissioning would be the same as the traffic generated during construction, as shown in Table TR-1 above. As shown in the table, project-generated traffic volumes would be very low relative to current traffic volumes on the affected roadways, and measures of performance would not be adversely affected by the project construction traffic. Upon decommissioning of each SGF after 25 years of operation, the long-term traffic forecasts for the affected roadways indicate that all roadways would be operating at acceptable service levels (Kings County 2010d, Fresno COG 2014). The temporary addition of relatively small volumes of traffic from SGF decommissioning is not expected to have a significant impact upon service levels on the affected roadways.

In summary, WSP solar development would not conflict with any applicable measure of performance effectiveness established by any transportation agency with jurisdiction over roadways affected by project-generated traffic. Therefore, the impact would be *less than significant*.

WSP Gen-Tie Corridors

During construction of the gen-tie projects, the work activities would be distributed along the gen-tie corridors, with various crews engaged in surveying, ROW clearing, access driveway construction, staging area preparation, tower foundation installation, tower assembly and erection, conductor installation, guard structure installation and removal, and site restoration. The construction of the transmission lines would involve truck trips for hauling equipment and materials to and from the construction sites, and also commute trips by construction workers.

Deliveries of tower steel, hardware, conductor spools, concrete, and equipment would occur throughout the construction period. The equipment and material deliveries would originate in various locations in northern and southern California, and concrete would be delivered from ready-mix plants in the Coalinga and Los Banos areas. Thus truck deliveries would come from I-5 in the west for regional access and then follow local highways and roads to reach the work sites along the transmission corridors.

The peak period of truck deliveries would occur during installation of foundations and structures for the transmission towers. Concrete would be delivered to tower sites by concrete mixer trucks for use in construction of the tower footings. As mentioned, it is expected that concrete would be supplied from an existing ready-mix plant located near Coalinga. It is estimated that up to 100 CY of concrete would be required at each tower location, for either monopoles or lattice towers. (Although monopoles would involve only one footing, the footing would be substantially wider and deeper than each of the four footings for a typical lattice tower, so the amount of concrete required would be similar for each tower type.) Given a concrete mixer truck capacity of 10 CY, and conservatively assuming that the footings for each tower would typically be completed in one day, a total of 10 concrete deliveries would occur at each tower site over the course of one day. Deliveries of tower steel and other materials for tower installation would involve approximately 22 round trips by trucks per day. The combined truck deliveries of concrete, steel, and other tower materials would total approximately 32 round trips per day (or 64 trip ends) at any

given tower site. Since installation of tower foundations and tower construction represent the peak of construction activities at any given site along the transmission corridor, these 64 one-way trips represent the peak daily truck traffic generation for transmission project construction. These truck trips would occur throughout the day, with only a small portion (i.e., 10 percent) occurring during the AM and PM peak-hour periods (i.e., up to 7 peak truck trips in the AM and 7 peak-hour truck trips in the PM). For purposes of evaluating traffic impacts, trucks trips are converted to Passenger Car Equivalents (PCEs), and each heavy truck trip is defined as 3 PCEs. Thus for purposes of analysis, the peak truck trip generation would be 21 PCE trips.

Construction workers would generate traffic in commuting to and from the work sites. Most construction workers are expected to reside in urban centers in the region, which are largely concentrated along the State Route 99 corridor to the east of the gen-tie corridors. The construction activity with the largest concentration of workers would be tower assembly and erection which typically involves a 22-person crew. Assuming that these workers would all commute solo, the peak traffic generated by construction personnel would be 22 peak-hour trips in the AM and 22 peak-hour trips in the PM.

The peak period for truck trips and worker commute trips is expected to overlap somewhat at each tower work site. The combination of peak-hour truck trips (i.e., 21 PCE trips) plus construction worker commute trips (i.e., 22 peak-hour trips) would result in a total of 43 peak-hour trips at any given tower work site. These trips would be widely distributed throughout the roadway network. As mentioned, most truck trips would be from I-5 in the west, while most construction workers would commute from population centers to the east. Thus the truck delivery routes and commute routes would tend to not overlap, except near the access points to the construction sites. During the peak hours, the effects on roadways and intersections nearest to the peak activity sites would be minor, with temporary increases in traffic volumes averaging less than one trip per minute.

At other construction work sites along the gen-tie corridors, the concentration of truck deliveries and construction worker activity would be lower than activity levels at tower work sites, with correspondingly lower traffic generation. While there may be some additive traffic generation effects at some roadway segments and intersections, these effects would be minor given the generally dispersed nature of the construction work sites, the relatively low intensity of the construction work, and the short duration of construction activity at any given site.

The primary impact associated with gen-tie line construction would be from slow moving construction trucks and the larger turning radii of the trucks compared to passenger vehicles. This may result in intermittent reductions in roadway capacity, but these effects would be temporary and would not result in a significant impact to the roadway service levels. Depending on conditions, restrictions may be placed on heavy truck and oversized vehicle deliveries during the AM and PM peak-hour commute periods. In addition, local transportation agencies may restrict truck traffic to specific haul routes. Whether such restrictions are adopted would be determined during the engineering design stage and during agency consultations undertaken during the course of project-specific environmental review for the transmission projects. (See Impact TR-4 below for further discussion.)

In summary, given the dispersed nature of transmission line construction, the relatively small number of truck and worker commute trips that would be generated at any given work site, the short duration of construction activity at each work site, and the broad distribution of construction traffic, the construction

of the gen-tie lines would not conflict with any applicable measure of performance effectiveness established by any transportation agency with jurisdiction over roadways affected by project-generated traffic. Therefore, the impact would be *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

Impact TR-2. Conflict with Congestion Management Program

***Westlands Solar Park*. The WSP solar projects would not conflict with any standards established by an applicable congestion management agency. (*Less-than-Significant Impact*)**

***WSP Gen-Tie Corridors*. The WSP gen-tie projects would not conflict with any standards established by an applicable congestion management agency. (*Less-than-Significant Impact*))**

This impact analysis addresses significance criterion 'b' above.

Westlands Solar Park

Transportation policies and programs in Kings County are established in the Kings County *2035 General Plan Circulation Element* and the Kings County Association of Governments (KCAG) *2014 Regional Transportation Plan (RTP).* (As noted in Section *3.13.2. Regulatory Context*, Kings County is not required to prepare a congestion management plan due to the largely rural nature of the county.) The *Circulation Element* establishes Level of Service D as the minimum service level to be maintained on County streets and roadways, and also includes policies promoting public transit and non-motorized transportation alternatives such as walking and bicycling (Kings County 2010d). The objective of the RTP is to maintain and enhance the efficiency of the transportation system through roadway improvements and the promotion of travel demand measures in order to reduce congestion and overall vehicle miles traveled (KCAG 2014).

As mentioned under Impact TR-1 above, the project would generate the highest volumes of traffic during the construction phases. As shown in Tables TR-1 and TR-2 above, the worker trips and truck trips generated during peak periods of construction activity would not result in a reduction of service levels on any of the affected roadways, which would remain at LOS B on most roadways, and LOS C on two roadway segments, under near-term and far-term conditions. Thus all roadways affected by project construction traffic would continue to operate at LOS C or better, thus maintaining the County's LOS standard of D as established in the General Plan Circulation Element.

Since traffic generated by WSP solar projects would affect roadways in Fresno County, the Fresno COG's Congestion Management Process is applicable. The Regionally Significant Roads identified in the Fresno

CMP that would be subject to WSP-generated traffic include Jayne Avenue, SR-198, and SR-269, all of which operate at LOS A or B under current conditions. As shown in Tables TR-1 and TR-2, the WSP-generated traffic would not reduce these levels of service under near-term or far-term conditions. Since the levels of service on the affected roadways would remain above Fresno County's LOS D minimum standard, the WSP solar development would not conflict with the Fresno County CMP.

Since the WSP plan area is located in a rural area, the WSP solar development does not readily lend itself to traffic reduction measures such as carpooling, transit use, or bicycle commuting. Although not assumed for this analysis, it is likely that some workers would choose to carpool. Since the peak period of construction activity would be under one year in duration for any SGF, the associated traffic generation would be temporary. Once the construction of each SGF is complete, the operational traffic from the solar facilities would be very light, generating an average of 10 trips per day for a typical 250 MW facility, and 80 trips per day over the entire plan area upon WSP buildout. This volume of traffic would be negligible and would have no effect on Level of Service on the affected roadways, which would continue to meet the LOS D standard of the affected counties, and the LOS C standard applied by Caltrans to its rural facilities.

In summary, WSP solar development would not conflict with any standards established by an applicable congestion management agency. Therefore, the WSP solar projects would have *no impact* in this regard.

WSP Gen-Tie Corridors

The WSP Gen-Tie Corridors pass through Fresno and Kings counties and the construction of the transmission projects would generate traffic on nearby state highways and regional roads as identified in the applicable Regional Transportation Plans and pertinent Congestion Management Program (only Fresno County has a CMP). The measure of performance effectiveness or level of service standard for both affected counties is LOS D, and the applicable Caltrans LOS standard is LOS C for its rural facilities.

In Kings County, the regional roads in the vicinity of the WSP Gen-Tie Corridors include SR-41, SR-198, and I-5. In Fresno County, the regional roads in the vicinity of the WSP Gen-Tie Corridors include Jayne Avenue, SR-269, I-5, and SR-198. In the vicinity of the WSP Gen-Tie Corridors, all of these roadways currently operate at LOS C or better.

As discussed under Impact TR-1 above, the traffic generated during construction of the gen-tie projects would be very light. This is due to the dispersed nature of gen-tie line construction, the relatively small number of truck and worker commute trips that would be generated at any given work site, the short duration of construction activity at each work site, and the broad distribution of construction traffic. The traffic generated during inspection and maintenance of the completed gen-tie facilities would be negligible. The construction and maintenance of the gen-tie facilities would not result in a reduction of level of service from the current acceptable service levels on all affected roadways. Therefore, the construction and operation of the WSP gen-tie projects would not conflict any standards established by an applicable congestion management agency. Therefore, the WSP gen-tie projects would have *no impact* in this regard

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

Impact TR-3. Change in Air Traffic Patterns or Levels, or Increase Safety Risks

***Westlands Solar Park*. The WSP solar projects are not expected to involve any helicopter use during construction and operation, and would not change air traffic patterns, increase air traffic levels, or otherwise result in substantial safety risks related to aviation. (*No Impact*)**

***WSP Gen-Tie Corridors*. The WSP gen-tie projects may make intermittent use of helicopters during construction, and would not change air traffic patterns, increase air traffic levels, or otherwise result in substantial safety risks related to aviation. Hazards to crop dusters would be minimized by routing the gen-tie lines adjacent to existing transmission and roadway corridors. (*Less-than-Significant Impact*)**

This impact analysis addresses significance criterion 'c' above.

Westlands Solar Park

The WSP plan area is located at least 15 miles from the nearest public use airports at Hanford, Coalinga, and Harris Ranch. There are 5 airstrips within a 5-mile radius of the plan area, the nearest of which are adjacent to the plan area at Shannon Ranch and Stone Land Company Ranch. The plan area is located is located 5 miles south of the airfield at Naval Air Station Lemoore (NASL) and is two miles south of the Accident Potential Zone (APZ) mapped for NAS Lemoore. As discussed in Section *3.7. Hazards and Hazardous Materials*, under Impact HAZ-10, the physical features within the WSP solar facilities would not be high enough to present an aviation hazard to public, military, or private flight operations. While helicopters are sometimes used in transmission project construction and inspection, this is not expected to occur within the WSP plan area given the flat terrain and general accessibility of the SGF sites. Therefore, the WSP solar development would have no effect on air traffic patterns or safety. In summary, WSP solar development is not expected to change air traffic patterns, increase air traffic levels, or otherwise result in substantial aviation safety risks, and thus would have *no impact* in this regard.

WSP Gen-Tie Corridors

The nearest municipal airports to the WSP Gen-Tie Corridors include the Hanford and Coalinga airports, which are located between 6 and 20 miles from the gen-tie corridors at their nearest points. The only other public use airport is the Harris Ranch Airport, which is located 4 miles northwest of the western ends of the gen-tie corridors. There are a total of 5 private airstrips within 7 miles of the WSP Gen-Tie Corridors. All of these airstrips are located in Kings County near the WSP plan area or to the east. As discussed in Section *3.7. Hazards and Hazardous Materials*, under Impact HAZ-10, the planned transmission towers would not be high enough to present an aviation hazard to public, military, or private flight operations. While helicopters may be used in gen-tie project construction, they would likely only be used to string conductors over the California Aqueduct and perhaps SR-269. These locations are at least 10 miles from the nearest public use airport and 4 miles from the nearest private airstrip. Therefore, the WSP gen-tie projects would have little or no effect on air traffic patterns or safety.

Crop dusting operations would need to take the new gen-tie lines into account, but the northern gen-tie line would be parallel and adjacent to an existing transmission line that the crop dusters would already be aware of. The southern gen-tie line would not run parallel to an existing transmission line but would run along the north side of the Nevada/Jayne Avenue transportation corridor. The potential hazard to crop dusters along this corridor would be minimized by the alignment of the southern gen-tie line along the edges of fields and adjacent to existing county roads. Therefore, the WSP Gen-Tie Corridors would not present a hazard to crop dusting operations in the vicinity.

In summary, the Westlands gen-tie projects are not expected to change air traffic patterns, increase air traffic levels, or otherwise result in substantial aviation safety risks, and thus the impact would be *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

Impact TR-4. Increased Traffic Hazards

***Westlands Solar Park*. During construction of WSP solar projects, slow moving trucks and slow turning movements by large equipment and material delivery trucks could pose a traffic safety hazard along the affected roadways. (*Less-than-Significant Impact with Mitigation*)**

***WSP Gen-Tie Corridors*. During construction of the WSP gen-tie projects, slow moving trucks and slow turning movements by large equipment and material delivery trucks could pose a traffic safety hazard along the affected roadways. (*Less-than-Significant Impact with Mitigation*)**

This impact analysis addresses significance criterion 'd' above.

Westlands Solar Park

The WSP solar projects would all obtain direct site access from existing Kings County roads such as Avenal Cutoff Road, Laurel Avenue, and Nevada Avenue. The use of these new entrances would result in turning movements in and out of the SGF sites which would increase the potential for interaction with through traffic along the affected County roads. However, these project entrances would be designed in accordance with the *Kings County Improvement Standards,* and would be subject to prior design review and approval by the Kings County Public Works Department. Project egress would be controlled by stop signs, and sight-lines for all entrances would be very good in all directions given the flat terrain, absence of visual obstructions, and linear alignment of the roadways. Thus the potential traffic hazard resulting from the project would be generally negligible, particularly during project operations when the solar facility would generate very little traffic.

As discussed above, the volume of traffic generated by the WSP solar projects would be greatest during the construction and decommissioning phases. This would include regular deliveries of materials and equipment by large trucks. Slow moving trucks could result in temporary congestion near the project entrances, and could pose a safety hazard due to abrupt changes in the speed of traffic flow, or due to slow turning movements across on-coming lanes of traffic. Unless properly managed, the traffic safety hazards due to construction and decommissioning traffic from WSP solar facilities would represent a *potentially significant impact*. With implementation of Mitigation Measure TR-1a below, the impact would be reduced to *less than significant*.

WSP Gen-Tie Corridors

The construction of the gen-tie projects would include new gen-tie line crossings at several county roads and one State highway. The affected county roads include Avenal Cutoff Road and 30th Avenue in Kings County, and Gale Avenue in Fresno County, and the affected State highway is SR-269.

Current Kings County policy would require undergrounding of the gen-tie lines at the crossings of Avenal Cutoff Road and 30th Avenue. This expected to be accomplished through tunneling beneath the roadways and thus would involve minimal traffic disruption.

Both Fresno County and Caltrans would allow overhead crossings at Gale Avenue and SR-269, respectively. Where the overhead crossings are permitted, temporary guard structures would typically be installed. Each guard structure would consist of standard wood poles and a cross beam to form an H-frame. These structures would be placed on both sides of the affected roadway, and may include netting hung between the cross beams to prevent the conductors from falling into traffic. The installation of the guard structures and netting, and the stringing of cable over the roadway could result in temporary delays and traffic congestion as equipment and materials are moved into or across the roadway. In addition, Caltrans and the counties would likely require short-term road closures when lines are strung over State highways or county roads as a condition of their required encroachment permits. For the busiest highways, the conductor crossings may need to be scheduled for nighttime hours when traffic is lightest. Private roads and lanes could also be subject to temporary closures during stringing of overhead lines. In some cases, the California Highway Patrol may be needed to create temporary traffic breaks. In cases where road closures would be longer in duration, temporary traffic detours may be needed to prevent traffic disruption.

Gen-tie line construction would involve the use of slow moving construction vehicles, many of which would have large turning radii. Safety hazards could arise from abrupt changes in traffic flow speeds caused by slow moving vehicles or from large trucks having to cross oncoming traffic lanes to make turns into construction areas.

In summary, the movement of construction vehicles, equipment and materials within and over public roadways could result in traffic disruption and safety hazards to the traveling public. Unless properly managed, safety hazards arising from construction truck traffic would represent a *potentially significant impact*. With implementation of Mitigation Measure TR-1b below, the impact would be reduced to *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. Implement MM TR 1a.**

***WSP Gen-Tie Corridors*. Implement MM TR-1b.**

MM TR-1a **Traffic Safety Measures for WSP Solar Projects**

As a condition of project approval, and prior to the issuance of encroachment permits, the project sponsor shall consult with the Kings County Public Works Department prior to initiation of construction and decommissioning activities that may affect area traffic (such as equipment and supply delivery necessitating lane closures, trenching, etc.) and shall implement appropriate traffic controls in accordance with the California Vehicle Code and other state and local requirements to avoid or minimize impacts on traffic. Traffic measures that shall be implemented during construction and decommissioning activities include the following:

a. Construction traffic shall not block emergency equipment routes.

b. Construction activities shall be designed to minimize work on, and use of, local streets. As examples, this might include the following:

- **i. Identify designated off-street parking areas for construction-related vehicles throughout the construction and decommissioning periods.**
- **ii. Identify approved truck routes for the delivery of all construction-related equipment and materials.**
- **iii. Limit the employee arrivals and departures, and the delivery of equipment and materials, to non-peak traffic periods (e.g., avoid unnecessary travel from 7 to 9 AM and 4 to 6 PM).**
- **iv. Provide for farm worker vehicle access and safe pedestrian and vehicle access.**
- **v. Provide advance warning and appropriate signage whenever road closures or detours are necessary.**

c. Construction shall comply with San Joaquin Valley Air Pollution Control District standards for unpaved roads, which include a requirement to keep vehicle speeds below 15 miles per hour and to have fewer than 150 trips per day per unpaved road.

The details of the traffic safety mitigations will be determined by the County Public Works Department at such time as the activities for which they are required are scheduled and the applicant's construction contractor requests consultation regarding such activities.

MM TR-1b. **Traffic Safety Measures for WSP Gen-Tie Projects**

Prior to the start of construction activity on a gen-tie project, the project proponent shall prepare and implement a Traffic Management Plan (TMP). The TMP is to include, but not be limited to, the following provisions:

- **A description of work hours, designated haul routes, and any timing restrictions on hauling during peak traffic periods.**
- **A description of traffic control measures such as flagging, warning signs, barricades, cones, and detours, including locations and timing of the measures.**
- **A description of the process for providing advance notification to property owners who would be affected by private road closures, temporary installation of guard structures, planned nighttime construction, and other construction activities. The notification would specify the timing and nature of the activity affecting each landowner, and would include contact information for designated construction personnel responsible for public coordination.**
- **A description of emergency services providers in the affected areas, along with provisions for notification of such service providers on the timing, location, and duration of construction activities, especially road closures and detours.**

The Traffic Management Plans would be subject to review and approval of the various transportation agencies, including Caltrans and the Counties of Kings and Fresno, as applicable. These reviews would occur during the course of encroachment permit application processes for their respective roadway facilities. The California Highway Patrol and County Sheriff's Departments would also review the TMPs prior to construction.

Impact TR-5. Emergency Access

***Westlands Solar Park*. The WSP solar projects would include traffic controls during construction, and would be designed to allow full emergency access within each completed SGF, such that WSP solar development would not result in inadequate emergency access. (*Less-than-Significant Impact*)**

***WSP Gen-Tie Corridors*. The WSP gen-tie projects would include traffic controls during construction, and would be designed to allow full emergency access to the completed gen-tie facilities, such that the WSP gen-tie projects would minimize the potential for inadequate emergency access. (*Less-than-Significant Impact*)**

This impact analysis addresses significance criterion 'e' above.

Westlands Solar Park

Projects can affect emergency response in two ways. First, projects may impede emergency response by creating obstructions to access. Second, the projects themselves may be designed in a way that results in inadequate emergency access. These are discussed in turn below.

As discussed under Impact TR-4 above, the construction of the WSP solar projects would involve deliveries by large and slow moving trucks that could result in traffic safety hazards. These delivery trucks could also result in localized congestion which could affect the movement of emergency vehicles. It is anticipated that any such delays to emergency vehicles would be addressed through the implementation of the traffic safety plans as specified in Mitigation Measure TR-1a above. As such, the potential for WSP solar projects to result in inadequate emergency access or passage by emergency vehicles through the WSP would be minimized, and the impact would be *less than significant*.

The WSP plan area is well served by a regional roadway network that includes SR-198, SR-41, and SR-269. Every solar generating facility within the WSP plan area will have direct access to one or more existing Kings County roads including Avenal Cutoff Road, Laurel Avenue, and Nevada Avenue. As such, there are no inadequacies with respect to emergency access to the individual SGFs within the WSP plan area.

Within each WSP solar project, there will be at least two facility entrances to an existing county road. These entrances will connect to the internal system of driveways and aisleways to provide adequate emergency access throughout each SGF. All SGFs will be designed and constructed to be in compliance with Kings County requirements for internal vehicular circulation and fire access by heavy emergency equipment. Upon submittal of CUP applications, project plans for each SGF will be reviewed by the appropriate Kings County departments for conformance with all applicable fire-safety code and ordinance requirements for emergency access. Therefore, the WSP solar projects would result in *no impact* with respect to adequacy of emergency access.

WSP Gen-Tie Corridors

As discussed under Impact TR-4 above, the construction of the WSP gen-tie projects would involve the use of large and slow moving trucks and equipment that could result in traffic safety hazards. These trucks could also result in localized congestion which could affect the movement of emergency vehicles. It is anticipated that any such delays to emergency vehicles would be addressed through the implementation of the traffic safety plans as specified in Mitigation Measure TR-1b above. As such, the potential for the Westlands transmission projects to result in inadequate emergency access or passage by emergency vehicles through the area would be minimized, and the impact would be *less than significant*.

The WSP gen-tie corridors vicinity is well served by a regional roadway network that is centered on I-5 and includes several state highways including SR-198, SR-269, and SR-41, along with several major county roads in Kings and Fresno counties. Emergency access to the gen-tie lines from the regional roadway network would be readily obtained through farm lanes and across fields as needed.

In summary, the accessibility of the WSP gen-tie corridors is adequate for emergency response. Therefore, the WSP gen-tie projects would not result in inadequate emergency response, and the impact would be *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

Impact TR-6. Conflict with Plans or Policies for Public Transit, Bicycle, or Pedestrian Facilities

***Westlands Solar Park*. The WSP solar development would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. (*Less-than-Significant Impact*)**

***WSP Gen-Tie Corridors*. The WSP gen-tie projects would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. (*Less-than-Significant Impact*)**

This impact analysis addresses significance criterion 'f' above.

Westlands Solar Park

The solar generating facilities within the WSP plan area are not expected to include permanent staff stationed at the SGFs; instead employees would travel to the SGFs on regular basis to perform maintenance, inspection, and repair tasks. As such, the WSP solar projects would not generate increased demand for bicycle, transit, or pedestrian facilities in the area.

The Regional Bike Routes plan in the *2035 Kings County General Plan Circulation Element* shows an existing bikeway on Avenal Cutoff Road through the WSP plan area, and a planned bikeway along Nevada Avenue between Avenal Cutoff Road and SR-41 within the plan area. Some of the WSP solar projects would have entrances on Avenal Cutoff Road and Nevada Avenue, which would increase potential interaction between bicyclists on the roadways and vehicles entering and exiting the SGFs. However, project egress at each SGF would be controlled by stop signs, and sight-lines in all directions would be very good given the flat terrain, the linear character of the roadways, and lack of visual obstructions. During SGF construction, the small increases in traffic congestion and hazard introduced by slow moving vehicles would be addressed through implementation of the traffic safety measures identified in Mitigation Measure TR-1a, which would also be expected to reduce potential traffic hazards to bicyclists. As such, the new SGFs would may result in temporary disruption to bicyclists, but would pose little or no safety hazard to bicyclists or otherwise decrease the performance of the existing or planned bikeways within the WSP plan area. The WSP solar projects would not conflict with any adopted policies, plans, or programs regarding bicycle facilities, or otherwise decrease the performance or safety of bicycle facilities.

There are no existing or planned public transit routes that pass through the WSP plan area. The nearest existing transit routes are the Hanford to Avenal Route, which follows SR-41 to the east of WSP, and the

Hanford to NAS Lemoore Route, which follows SR-198 to the north of WSP. The WSP solar projects would not decrease the performance or safety of these transit routes facilities. There are no existing or planned pedestrian facilities within or near the WSP plan area. The WSP solar projects would not conflict with any adopted policies, plans, or programs regarding transit or pedestrian facilities, or otherwise decrease the performance or safety of transit or bicycle facilities.

In summary, the WSP solar development would result in little or no potential conflicts with transit, bicycle, or pedestrian plans, policies, or programs, or otherwise decrease the performance or safety of such facilities. Therefore, the impact of WSP solar development in this regard would be *less than significant*.

WSP Gen-Tie Corridors

The WSP gen-tie projects would result in no increased demand for non-vehicular transportation facilities, and would introduce no permanent physical elements that would conflict with existing or planned bicycle, transit, or pedestrian facilities.

In Kings County, there is an existing bike route along Nevada Avenue between SR-41 and Avenal Cutoff Road (Kings County 2010d). In Fresno County, there are existing and planned bikeways along Jayne Avenue and SR-269 in the vicinity of the WSP gen-tie corridors (Fresno County 2000b). The WSP gen-tie projects would cross over, or run parallel to, all of the roadways with existing or planned bike paths identified above. During construction of the gen-tie projects, small increases in localized traffic congestion and hazard may be introduced by slow moving vehicles and by gen-tie crossings over these roadways. These potential safety hazards would be addressed through the implementation of the traffic safety measures identified in Mitigation Measure TR-1b, which would also be expected to reduce potential traffic hazards to bicyclists, transit vehicles, and pedestrians during construction. During operation, the gen-tie lines would have no impact on bicycle facilities. There are no existing or planned transit routes, or existing or planned pedestrian facilities, in the vicinity of WSP Gen-Tie Corridors.

In summary, the construction of the WSP gen-tie projects would result in little or no potential conflicts with transit, bicycle, or pedestrian plans, policies, or programs, or otherwise decrease the performance or safety of such facilities. Therefore, the impact of the WSP gen-tie projects in this regard would be *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

Cumulative Impacts

Impact TR-7. Cumulative Transportation/Traffic Impacts

***Westlands Solar Park*. The traffic generated by WSP solar projects, along with traffic from other cumulative projects, would combine to result in increased traffic volumes on roadways in the area. (*Less-than-Significant Cumulative Impact*) During construction and decommissioning, traffic safety hazards may be created by construction vehicles on roadways. (*Less-than-Significant Cumulative Impact with Mitigation*)**

***WSP Gen-Tie Corridors*. The traffic generated by WSP gen-tie projects, along with traffic from other cumulative projects, would combine to result in in increased traffic volumes on roadways in the area. (*Less-than-Significant Cumulative Impact*) During construction and decommissioning, traffic safety hazards may be created by construction vehicles on roadways. (*Less-than-Significant Cumulative Impact with Mitigation*)**

Geographic Scope of Cumulative Traffic Analysis

The construction and operation of the WSP solar facilities would also generate traffic which would increase traffic volumes along roadways serving the WSP solar projects. The project contributions to cumulative traffic would diminish with distance from the plan area, as project traffic would radiate from the site and disperse throughout the surrounding roadway network. Thus WSP-generated traffic would be concentrated on roadways in the immediate vicinity. The cumulative analysis of traffic impacts considers projects that have the potential to contribute traffic to roadways which would also be subject to substantial WSP-generated traffic. These are the same study roadways evaluated under Impact TR-1. The projects in the WSP vicinity that have the potential to generate significant cumulative traffic volumes are described below.

Westlands Solar Park

Near-Term

Under near-term conditions, there are four pending, approved, and completed projects (or groups of projects) in the WSP vicinity that have the potential to generate significant cumulative traffic to roadways that are also most affected by WSP-generated traffic. All four of these projects comprise solar PV developments. These solar projects are listed below and described in Section *2.5. Completed, Approved and Pending Projects/ Introduction to Cumulative Impact Analysis*. Their locations are shown in Figure PD-9.

- Mustang/Orion/Kent South
- American Kings
- Mustang 2
- Kettleman

As noted previously, two of the cumulative projects have been constructed (Mustang/Orion/Kent South, and Kettleman), and two others (American Kings and Mustang 2) may be under construction at the same

time as solar projects within WSP. Therefore, only the American Kings solar project (125 MW) and the Mustang 2 solar project (150 MW) have the potential to contribute substantial cumulative traffic in the near-term. There are no other pending or approved developments within the general WSP vicinity that have the potential to contribute substantial cumulative traffic volumes to the roadway network utilized by the WSP solar projects during their construction or operational phases. [Note: Although the Westside Solar Project Phases 1 and 2 is also a cumulative project in the vicinity, that project is located within the WSP plan area and therefore is considered part of WSP for purposes of the cumulative analysis.] For purposes of this analysis, it is assumed that peak construction period of the two unconstructed cumulative projects (American Kings and Mustang 2) would occur at the same time as the peak construction period assumed for WSP solar development.

Level of Service Impacts

In general, the combined traffic from project construction and operational activities at the cumulative projects would result in a cumulative traffic impact if the combined traffic volumes from the cumulative projects results in a reduction of level of service at any affected roadway below the LOS level considered acceptable by the applicable agency (i.e., below LOS C for Caltrans facilities and below LOS D for Kings and Fresno county roads).

The American Kings and Mustang 2 solar projects occupy a combined area of 3,384 acres (with a combined generating capacity of about 275 MW) located directly to the northeast and east of the northeast corner of the WSP plan area (see Figure PD-9 in Chapter *2. Project Description*). For purposes of this worst-case cumulative analysis, it is assumed that the traffic generated by the two nearby SGFs during construction would be the same as for the overlapping construction of the two 250-MW SGFs assumed in the WSP analysis in Impact TR-1 above, and that the distribution of construction traffic on the local roadway network would be the same as for the WSP case. Thus, under this near-term cumulative traffic scenario, the traffic volumes added to the local roadway network by the cumulative projects, including the WSP projects, would be double the traffic volumes for the WSP case alone. The traffic volumes added to the local roadway network under the assumed near-term conditions are shown in Table TR-3, on the next page.

As shown in Table TR-3, the traffic volumes added by the cumulative projects result in no changes to LOS levels on any of the affected roadway segments, which all operate at LOS C or better after the addition of the cumulative traffic. The resulting traffic volumes do not exceed the level of service thresholds for any of the jurisdictional agencies. Therefore, the near-term cumulative traffic impacts due to increased traffic on affected roadways would be *less than significant*.

Other Transportation/Traffic Impacts

Under near-term cumulative conditions, the other potential traffic impacts would correspond to those evaluated for WSP solar development previously in this section. These are discussed below.

In terms of conflicts with applicable congestion management plans, the cumulative traffic volumes would not exceed the applicable levels of service on regional roadways of significance, and therefore the impact would be *less than significant*.

The two other cumulative projects comprise solar development projects that are adjacent to the WSP plan area and therefore are very similar in character as well as in their geographical characteristics. As such, the above analyses for the WSP solar development with respect to aviation hazards and non-motorized

transportation impacts are equally applicable to this cumulative analysis, and the near-term cumulative impacts would be *less than significant*.

TABLE TR-3
NEAR-TERM CUMULATIVE TRAFFIC CONDITIONS*

Roadway Segment	Baseline Conditions (2018)			Next LOS Transition (AADT/LOS)	WSP Project Avg. Daily Trips (Peak Construction Period)	Cumulative Avg. Daily Trips (Peak Construction Period –incl. Project)	LOS with Cumula-tive Projects	LOS Impact Threshold (Impact?)
	AADT	Roadway Lanes (Agency)	LOS					
Avenal Cutoff Road								
- b/n SR-198 & Nevada/Jane	5,359	2 (KC)	C	13,800/D	433	866	C	D/E (No)
- b/n Nevada/Jane & SR-269/I-5	3,122	2 (KC)	B	4,200/C	85	170	B	D/E (No)
Laurel Avenue								
- b/n Avenal Cutoff & SR-41	947	2 (KC)	B	4,200/C	775	1550	B	D/E (No)
Lincoln/Gale Avenues								
- b/n Avenal Cutoff & SR-269	1748	2 (FC)	B	4,200/C	56	112	B	D/E (No)
SR-198								
- b/n Avenal Cutoff & SR-41	18,545	4 (fwy)(CT)	B	39,600/C	236	472	B	C/D (No)
- b/n SR-41 & 18th Ave.	20,606	4 (fwy)(CT)	B	39,600/C	244	488	B	C/D (No)
SR-41								
- b/n SR-198 & Bush St.	17,000	4 (fwy)(CT)	B	39,600/C	435	870	B	C/D (No)
- b/n SR-198 & Jackson Ave.	12,879	2 (CT)	C	13,800/D	444	888	C	C/D (No)
- b/n Jackson & Nevada Aves.	9,273	2 (CT)	C	13,800/D	518	1036	C	C/D (No)
- b/n Nevada & Bernard Aves.	7,109	2 (CT)	C	13,800/D	43	86	C	C/D (No)
- b/n Bernard Ave. & I-5	20,812	4 (CT)	B	29,300/C	43	86	B	C/D (No)
Jayne/Nevada Avenues								
- b/n SR-41 & Avenal Cutoff	406	2 (KC)	B	4,200/B	292	584	B	D/E (No)
- b/n Avenal Cutoff & SR-269	3,130	2 (FC)	B	4,200/B	267	574	B	D/E (No)
- b/n SR-269 & I-5	3,590	2 (FC	B	4,200/C	251	502	B	D/E (No)
- b/n I-5 & SR-33	6,365	2 (FC)	C	13,800/D	251	502	C	D/E (No)

* Notes:
1) Table shows near-term WSP traffic (see Table TR-1) plus traffic from near-term cumulative projects (see text for explanation).
2) Operational traffic in the near-term is negligible and is not included in the near-term cumulative traffic scenario.

With respect to traffic hazards, it is expected that the other two cumulative projects would be required to prepare and implement traffic safety plans, similar to the plan required under Mitigation Measure TR-1a above, to manage construction traffic, which would result in a *less than significan*t cumulative impact in terms of traffic hazards. With regard to emergency access, it is anticipated that each of the cumulative solar projects would be designed and constructed to facilitate full access for emergency vehicles throughout

their sites, and that any obstruction of emergency vehicle passage on the adjacent roadways would be avoided through implementation of traffic management plans, as discussed above, such that there would be a *less than significant* cumulative impact with respect to emergency access.

In summary, the cumulative near-term transportation and traffic impacts associated with the combined development of the WSP plan area and other pending, approved and completed projects would be *less than significant with mitigation*.

Far Term

The cumulative traffic conditions in the far term would reflect buildout of land uses planned under the 2035 Kings County General Plan and the Fresno County 2000 General Plan. As designated in the Kings County Land Use Map (GP Fig. LU-11), all the lands in the WSP vicinity are planned for agricultural land uses. It is possible that currently unknown or unforeseen development could occur on the agriculturally-designated lands in the WSP vicinity. Such development could consist of solar PV facilities or infrastructure improvement projects such as power transmission lines or transportation capacity enhancing projects. It is also possible, but unlikely, that the peak construction periods of such projects could occur at the same time as nearby solar development within the WSP plan area, resulting in potential temporary increases in cumulative traffic volumes on the transportation network.

Under the worst-case assumption, WSP buildout would occur in 2030, when it is assumed that traffic volumes projected for General Plan buildout would also occur. The hypothetical worst-case condition for WSP traffic generation under far-term conditions, presented in Table TRA-2, assumes that all operational traffic from WSP buildout would be included, in addition to construction traffic generated by peak construction activity from two 250 MW solar facilities within WSP constructed concurrently. It is further assumed that the other currently proposed and approved solar projects in the area would be completed and operational. All future non-solar development projects are assumed to be included in the traffic projections for General Plan buildout.

It is possible that additional solar and other development may be proposed within the life of the Kings County and Fresno County General Plans that is not reflected in the current Land Use Elements; and any such development may generate traffic that is not included in the traffic projections of the respective Circulation Elements. However, the nature and location of such potential development is currently unforeseeable. Any attempt to predict and analyze the potential impacts from currently unknown development patterns would be speculative, and CEQA explicitly requires that EIRs not engage in such speculative analysis (CEQA Guidelines Section 15145).

The far-term traffic condition in 2030 upon WSP buildout (and with two 250-MW SGFs still under construction) is presented in Table TR-2 under Impact TR-1. As shown in the table, the far-term WSP traffic generation under this scenario does not result in a reduction of level of service or an LOS impact on the affected roadway segments. It is anticipated that all currently pending solar PV projects in the WSP vicinity will have been completed and will be operational by 2030. As discussed under Impact TR-1, the traffic generated by operation of solar PV facilities is very light, and would average about 20 round trips per day for a 250 MW facility. On this basis, it is estimated that other operating solar PV projects in the WSP vicinity in 2030 (totaling approximately 500 MW) would generate total of 100 daily trips, on average (i.e., 20 worker commute round trips + 30 truck delivery trips [20 trips X 1.5 for PCE] = 50 round trips X 2 = 100 daily trip ends). This traffic volume would be very small relative to ambient traffic on the

affected roadways, and when added to the worst-case far-term traffic generation from operation and construction of the WSP solar facilities, would not result in LOS impacts under far cumulative conditions.

In summary, the far-term traffic volumes added by the cumulative projects result in no changes to LOS levels on any of the affected roadway segments, which all operate at LOS C or better after the addition of the cumulative traffic. The resulting far-term traffic volumes do not exceed the level of service thresholds for any of the jurisdictional agencies. Therefore, the near-term cumulative traffic impacts due to increased traffic on affected roadways would be *less than significant*.

Other Transportation/Traffic Impacts

Under far-term cumulative conditions, the other potential traffic impacts would correspond to those evaluated for near-term conditions above. These are discussed below.

In terms of conflicts with applicable congestion management plans, the far-term cumulative traffic volumes would not exceed the applicable levels of service on regional roadways of significance, and therefore the impact would be *less than significant*.

The other cumulative projects comprise solar development projects that are adjacent to the WSP plan area and therefore are very similar in character as well as in their geographical characteristics. As such, the above analyses for the WSP solar development with respect to aviation hazards, emergency access, and non-motorized transportation impacts are equally applicable to the far-term cumulative analysis, and the far-term cumulative impacts would be *less than significant*. With respect to traffic hazards, it is expected that other cumulative projects would be required to prepare and implement traffic safety plans, similar to the plan required under Mitigation Measure TR-1a above, to manage construction traffic. This would reduce the far-term cumulative traffic hazard impact to *less than significant*.

In summary, the cumulative far-term transportation and traffic impacts associated with the combined development of the WSP plan area and other pending, approved and completed projects would be *less than significant with mitigation*.

WSP Gen-Tie Corridors

As discussed previously in this section, the traffic generated by transmission projects is very light during project construction and negligible during operation. During construction, the low traffic volumes are due to the dispersed nature of transmission line construction, the relatively small number of truck and worker commute trips that would be generated at any given work site, the short duration of construction activity at each work site, and the broad distribution of construction traffic. During gen-tie operation, the inspection, maintenance and repair tasks would be infrequent and involve a small number of workers and equipment. As such there is virtually no potential for traffic generated by another project to combine with traffic from the WSP gen-tie projects and result in a significant traffic impact. Therefore, this cumulative analysis considers only projects that are planned to locate adjacent to the WSP gen-tie corridors.

Near Term

Under near-term conditions, there are four pending, approved and completed solar projects and two pending transmission projects in the immediate vicinity of the WSP Gen-Tie Corridors. These projects are

listed below and shown in Figure PD-10, and described in Section *2.5. Completed, Approved, and Pending Projects/Introduction to Cumulative Impact Analysis*.

- Westlands Solar Farm
- PGE Gates Solar
- PGE Huron Solar
- EC&R Solar Project
- Westside Transmission Project (Gates to Dos Amigos/Los Banos Substation)
- Central Valley Power Connect (CVPC)(Gates to Gregg Transmission Project)

It is noted that the first three solar projects listed have been completed and are operational. Given the negligible traffic generated by the operation of these solar projects, these projects would not have a cumulative traffic impact and therefore are not considered further in this cumulative analysis. It is also noted that the CVPC transmission project has been placed on hold and may not move forward. However, for purposes of this analysis, it is considered an active pending project and thus is included in this cumulative analysis.

Traffic LOS Impacts

The planned gen-tie corridors would generate very small traffic volumes during construction and negligible traffic during operation. The EC&R solar project would generate considerable traffic during construction and very little traffic during operation. It is expected that the EC&R project, which is located adjacent to the northern WSP gen-tie corridor, would be constructed in the near-term. Since the northern WSP gen-tie would not be constructed until the latter stages of WSP build-out, it is highly unlikely that EC&R solar project and the northern WSP gen-tie project would be constructed at the same time, and thus would not generate construction traffic at the same time. Although the EC&R solar project and the southern WSP gen-tie project could be constructed at the same time, the nearest distance between the two projects is about a half-mile. Even under worst-cased conditions, construction on the most proximate portions of both projects, at a distance of about one-half mile, would occur very briefly. For the majority of construction activity on both projects, the active construction on the two sites would be miles apart, where the additive effects of the very low volumes of construction traffic from the gen-tie project would be virtually nil.

In the unlikely event that the one or both of the cumulative transmission projects were constructed at the same time as one of the WSP gen-tie projects, it is highly unlikely that a significant level of service impact would occur, even temporarily during construction. This is primarily due to the temporary nature and very low intensity of transmission line construction, resulting in very low traffic generation from each transmission project, and the unlikelihood of one or more transmission project phase or segment being under construction in proximity to one another at any given time. There would be no discernable accumulation of construction traffic from the three transmission projects, even under worst-case conditions. During transmission operation, traffic generation would be negligible and therefore not considerable. Therefore, the cumulative traffic level of service impact associated with the WSP gen-tie projects would be *less than significant*.

Other Transportation/Traffic Impacts

Under near-term cumulative conditions, the other potential traffic impacts would correspond to those evaluated for the WSP Gen-Tie Corridors previously in this section. These are discussed below.

In terms of conflicts with applicable congestion management plans, the cumulative traffic volumes would not exceed the applicable levels of service on regional roadways of significance, and therefore the impact would be *less than significant*.

The two other transmission projects are very similar in character to the WSP gen-tie projects, and the cumulative solar PV projects would be very similar in character to the WSP solar projects. As such, the above analyses for the WSP gen-tie projects and WSP solar development with respect to aviation hazards and non-motorized transportation impacts are equally applicable to this cumulative analysis, and the near-term cumulative impacts would be less than significant. .

With respect to traffic hazards, it is expected that all of the cumulative projects would be required to prepare and implement traffic safety plans to manage construction traffic, similar to the plan required under Mitigation Measure TR-1b above, which would result in a *less than significan*t cumulative impact in terms of traffic hazards. With regard to emergency access, it is anticipated that the cumulative solar projects would be designed and constructed to facilitate full access for emergency vehicles throughout their sites, and that any obstruction of emergency vehicle passage on the adjacent roadways would be avoided for all cumulative projects through implementation of traffic management plans, as discussed above, such that there would be a *less than significant* cumulative impact with respect to emergency access.

In summary, the cumulative near-term transportation and traffic impacts associated with the combined development of the WSP gen-tie projects and other pending, approved and completed projects would be *less than significant with mitigation*.

Far Term

Under far-term conditions in 2030, the WSP gen-tie projects and other cumulative projects discussed under near-term conditions above would be completed. The traffic generated by inspection, maintenance, and repair activities associated with gen-tie facility operation would be negligible, as discussed above. The nature and location of future development in the vicinity of the WSP gen-tie corridors in 2030 is unknown. While the General Plans for Kings and Fresno counties indicate a continuation of rural and agricultural development patterns in the vicinity of the gen-tie corridors, there is a potential for solar development or currently unknown new communities or public infrastructure or agricultural processing facilities to be developed nearby. Even so, the traffic generated from operation of the WSP gen-tie lines would be sufficiently low that even under worst-case conditions where development or public infrastructure projects would occur adjacent to the gen-tie corridors, the traffic generated by the gen-tie facilities combined with construction and/or operation of known nearby projects would not result in a substantial cumulative increase in traffic volumes. Therefore, the cumulative traffic level of service impacts associated with the operation of WSP gen-tie lines in the far term would be *less than significant.*

Other Transportation/Traffic Impacts

Under far-term cumulative conditions, it is expected that all of the near-term cumulative transmission and solar projects would be complete and operating. There are no other currently known projects that would be under construction or operational under far-term cumulative conditions. Therefore, this evaluation addresses the cumulative impacts associated with far-term operation of the known near-term cumulative projects.

In terms of conflicts with applicable congestion management plans, the far-term cumulative traffic volumes would not be expected to exceed the applicable levels of service on regional roadways of significance and therefore the impact would be *less than significant*.

Any impacts associated with the cumulative projects regarding aviation hazards, emergency access, and non-motorized transportation are anticipated to not be significant or to be reduced to less than significant levels by mitigation measures implemented during design and construction of the cumulative projects in the near term, and thus the related far-term cumulative impacts would be *less than significant*. With respect to traffic hazards, it is expected that other cumulative projects would be required to prepare and implement traffic safety plans, similar to the plan required under Mitigation Measure TR-1b above, to manage construction traffic. This would reduce the far-term cumulative traffic hazard impact to *less than significant*.

In summary, the cumulative far-term transportation and traffic impacts associated with the combined development of the WSP gen-tie projects and other pending, approved and completed projects would be *less than significant with mitigation*.

Mitigation Measures:

***Westlands Solar Park*. Implement MM TR-1a. No additional mitigation is required.**

***WSP Gen-Tie Corridors*. Implement MM TR-1b. No additional mitigation is required.**

REFERENCES/BIBLIOGRAPHY – TRANSPORTATION/TRAFFIC

Caltrans 2002 — California Department of Transportation (Caltrans). 2002. Guide for the Preparation of Traffic Impacts Studies. http://www.dot.ca.gov/hq/tpp/offices/ocp/igr_ceqa_files/tisguide.pdf

Caltrans 2009 — California Department of Transportation (Caltrans). 2009. Levels of Service and Caltrans. January https://www.opr.ca.gov/docs/Scott_Sauers.pdf

Caltrans 2013 — California Department of Transportation (Caltrans), Office of System Planning, District 6. 2013. State Route 41 Transportation Concept Report. July http://www.dot.ca.gov/d6/planning/tcrs/sr41tcr/sr41_tcr_072013_web.pdf

Caltrans 2017 — California Department of Transportation (Caltrans), Division of Traffic Operations. 2017. *2015 Traffic Volumes on the California State Highway System*. January http://www.dot.ca.gov/trafficops/census/docs/2015_aadt_volumes.pdff

Caltrans 2016 — California Department of Transportation (Caltrans), Office of System Planning, District 6. 2016. State Route 198 Transportation Concept Report. June http://www.dot.ca.gov/d6/planning/tcrs/sr198tcr/sr198_tcr_final_june_2016.pdf

Fresno County 2000b — County of Fresno. 2000. Fresno County 2000 General Plan –Policy Document. October. http://www2.co.fresno.ca.us/4510/4360/General_Plan/GP_Final_policy_doc/Table_of_Contents_rj_blue.pdf

Fresno County 2016 — County of Fresno. 2016. *Fresno County Code of Ordinances*. As amended through April 26, 2016. https://www.municode.com/library/ca/fresno_county/codes/code_of_ordinances

Fresco COG 2013 — Fresno Council of Governments (Fresno COG). 2013. *Fresno County Regional Traffic Monitoring Report*. April. http://www.fresnocog.org/sites/default/files/publications/Modeling/TrafficCountReport_2007-2012.PDF

Fresno COG 2014 — Fresno Council of Governments (Fresno COG). 2014. *2014 Regional Transportation Plan (RTP) and Sustainable Communities Strategy – Program EIR*. March. http://www.fresnocog.org/sites/default/files/publications/RTP/Final_RTP/Fresno_COG_2014_RTP_Draft_PEIR.pdf

KCAG 2014 — Kings County Association of Governments (KCAG). 2013. *2014 Kings County Regional Transportation Plan (RTP)*. July. http://www.kingscog.org/assets/2014%20RTP%20Adopted%20Chapters.pdf

Kings County 2003 — Kings County. 2003. *County of Kings Improvement Standards*. May 6, 2003. http://www.countyofkings.com/home/showdocument?id=3098

Kings County 2010a — County of Kings. 2010. *2035 Kings County General Plan – Land Use Element*. January. http://www.countyofkings.com/home/showdocument?id=13503

Kings County 2010d — County of Kings. 2010. *2035 Kings County General Plan – Circulation Element*. January. http://www.countyofkings.com/home/showdocument?id=3116

Kings County 2016a — Kings County. 2016. *Kings County Code of Ordinances, as amended through October 4, 2016*. https://www.municode.com/library/ca/kings_county/codes/code_of_ordinances

Kings County 2016b — Kings County. 2016. *Kings County Development Code. Kings County Code of Ordinances, Appendix A - Ordinance No. 668.12*. Dated January 26, 2016; Effective February 26, 2016.

http://www.countyofkings.com/home/showdocument?id=12535

JLUSPC 2011 — Naval Air Station Lemoore Joint Land Use Study Policy Committee (JLUSPC). 2011. *NAS Lemoore Joint Land Use Study – Final Release*. August 30. http://www.kingscog.org/index.asp?SEC=1E7B4327-327C-4971-85B4-05AF6F18D22A&Type=B_LIST

This page intentionally left blank

3.14. UTILITIES AND SERVICE SYSTEMS

3.14.1. ENVIRONMENTAL SETTING

Westlands Solar Park

Water Supply

Agricultural water supply for crop irrigation within the WSP plan area is mainly provided from surface water deliveries provided through the Westlands Water District. Surface supplies are augmented by groundwater pumping from agricultural wells located throughout the plan area. These water supplies consist of untreated non-potable water intended solely for application to crops. There are no sources of potable domestic water within the WSP plan area.

Surface Water Deliveries

The WSP plan area lies entirely within the boundaries of the Westlands Water District. WWD was formed in 1952 to serve agricultural water users on the west side of the San Joaquin Valley, and has a service area of 610,000 acres (960 square miles). WWD comprises 87 percent of the San Luis Unit service area of the federal Central Valley Project (CVP). In 1968, the WWD began receiving deliveries of CVP water from the U.S. Bureau of Reclamation via the San Luis Canal, the federally-constructed section of the California Aqueduct between San Luis Reservoir and Kettleman City. Under its current contract with the USBR, the Westlands Water District is entitled to receive 1.197 million acre-feet (af) of surface water delivery during years when 100 percent of this "Contract" water is available. (Note: Under the terms of a 2015 settlement agreement with the U.S. Department of Justice, the CVP surface water deliveries to Westlands will be capped at 895,000 acre-feet per year.) Surface water for the WSP plan area is conveyed by a series of lateral pipes extending eastward from the San Luis Canal to metered valves located throughout the plan area.

The west side of the San Joaquin Valley was among the last areas in the Central Valley to receive imported water from the Delta. The San Luis Unit was constructed to deliver "surplus Delta water," since the existing water users elsewhere in the State either had senior water rights or had a higher priority in the queue to receive Contract water from the federal CVP or the State Water Project. The water contractors located south of the Delta generally have lower priority for Contract water, and these contractors suffer disproportionately during drought conditions when water deliveries are curtailed. Between 2006 and 2015, WWD has received its full 100 percent contract entitlement in only one year - 2006. In 8 of those 10 years, WWD received water allocations that were 50 percent or less than its Contract entitlement. The average annual water allocation received during that 10-year period was about 460,000 acre-feet, or 38.5 percent of the contract entitlement (WWD 2017). This represents 31 percent of the total irrigation water requirement (i.e., 1.5 million acre-feet) in the District. In 2014 and 2015, the WWD water allocation was 0 percent, and in 2016 it was 5 percent. (In 2017, the WWD is anticipated to receive 100 percent of its contract water allocation after the above normal rainfall year.) The curtailment of surface water deliveries is experienced equally by all of WWD's contractors, including

the growers within the WSP site. Under the terms of a 2015 settlement agreement with the U.S. Department of Justice, the CVP surface water deliveries to Westlands will be capped at 895,000 acre-feet per year (USBR 2015).

Groundwater Supply

Given the chronic shortage of surface water supplies, growers within the WWD service area must augment surface water deliveries with pumped groundwater to meet crop irrigation needs. Since 1988, groundwater withdrawals within WWD have averaged about 273,000 acre-feet per year (afy), or about 0.48 acre-feet per irrigable acre (WWD 2017). However, the volume of groundwater pumping varies substantially from year to year depending on availability of CVP surface water deliveries. For example, in 2006 and 2017, the latest years WWD received 100 percent of its CVP water allocation, the annual volume of groundwater pumped averaged 28,500 acre-feet over the two years, representing a small portion of overall annual irrigation requirement of about 1.5 million acre-feet District-wide. During years of severe drought, like the recent drought of 2012 through 2016, groundwater pumping increases. to make up for shortfalls of surface water deliveries. During those five drought years, WWD growers received an average of 13 percent of CVP surface water deliveries, and total groundwater pumping within the District averaged 586,000 acre-feet per year, or slightly more than 1.0 acre-foot per irrigable acre. From 2012 to 2014, the groundwater elevations in the lower (sub-Corcoran) aquifer dropped by as much as 400 feet (WWD 2013, 2015, 2016, 2017; DWR 2003).

Groundwater Quality

Salts and Selenium

As discussed in Section *3.2. Agricultural Resources*, the soils within the WSP plan area contain high levels of naturally-occurring salts and other minerals such as selenium. Imported surface water deliveries also include low concentrations of salt. When near-surface water evaporates or is transpired through crops, the precipitated salts are left behind, resulting in increased salinity in the surface soils. To reduce salt concentrations in the near-surface soil, imported water is used to flush excess salts downward prior to planting. This flushing practice, followed by the application of irrigation water to planted crops, has resulted in large downward head gradients (i.e., downward pressure on percolating groundwater). As a result, some of the salts and selenium in the near surface soils are leaching deep into the alluvium and increasing the salt and selenium concentrations in the lower aquifer, which is used for drinking water and irrigation water. Although the lower aquifers are hundreds of feet below the surface, the poor quality groundwater is moving downward in response to recharge by irrigation from above the water table and by removal of groundwater via wells screened in the lower aquifer. Given the downward flow rate of saline water, it has been estimated that the usable average life of the aquifer in Westlands is from 110 to 114 years, assuming continuation of current farming practices (USBR 2006, p. 6-2).

Nitrates

Contamination of groundwater from nitrate loading is a significant threat to drinking water quality in the eastern portions of the south San Joaquin Valley. The primary sources of well water contamination are agricultural fertilizers, wastewater from dairy operations, and individual septic systems. A nitrate contamination study of the southern San Joaquin and Salinas Valleys was prepared by UC Davis for the State Water Resources Control Board in January 2012 (UCD 2012). With respect to western Kings County and western Fresno County, the UC Davis study found that nitrate loading due to septic systems

was very low at 1 kilogram of nitrogen per hectare per year (kg N/ha/yr) or 0.9 lb per acre per year. The nitrate levels in wells were similarly low, with maximum levels found to be well below the State's Maximum Contaminant Level (MCL) of 45 milligrams per liter (mg/L) in almost all wells, with the exception of wells near four small communities in western Fresno County (Five Points, San Joaquin/Tranquillity, Mendota). Within the WSP plan area, the maximum nitrate concentrations in all wells were found to be less than 2.0 mg/L (UCD 2012, p. 39).

Wastewater Collection and Treatment

The WSP plan area is not within or near an area served by a community wastewater collection and treatment system. During construction of each WSP solar facility, the domestic wastewater generated by construction workers would be accommodated through the use of portable toilet facilities, with regular cleanout and disposal at an approved site. Upon completion, the operational wastewater disposal needs for each WSP solar generating facility would be provided by individual septic tanks which would be emptied as needed by septic tank pumping contractors. It is not expected that any WSP solar facilities would include onsite leachfields. If any individual septic tank and leachfield systems are proposed for WSP solar facilities, such systems would be designed and constructed to meet the requirements and standards of the Kings County Plumbing Code. (See Section *3.14.3. Regulatory Context* for a discussion of applicable Plumbing Code requirements.)

Solid Waste

Solid waste collection and disposal service in Kings County is provided by the Kings Waste and Recycling Authority (KWRA). The KWRA was formed in 1998 by agreement between Kings County and the cities of Lemoore, Hanford, and Corcoran. Solid waste from the member jurisdictions is transported to KWRA Materials Recovery Facility in Hanford where wastes are separated for recycling, composting, or landfill disposal. Commercial solid waste is collected by private contract with licensed haulers (Kings County 2010a). Used construction and demolition material is accepted at an approved facility in Hanford (CalRecycle 2016a).

Non-recyclable materials are transferred to the Chemical Waste Management Landfill (CWML) site on SR-41 in Kettleman Hills approximately 10 miles south of the WSP plan area. The CWML has a maximum disposal rate of 2,000 tons per day, and currently accepts an average of 1,350 tons per day. The total permitted capacity of CWML is 18.4 million cubic yards, with a currently remaining capacity of approximately 15.8 million cubic yards, as of January 2016. The facility's estimated closure year is 2030, with the actual closure date depending on the rate of fill (CalRecycle 2016c)(Waste Management 2016).

WSP Gen-Tie Corridors

Water Supply

The relatively small water demands during construction of the WSP gen-tie projects would be provided by agricultural wells or municipal sources within Kings and Fresno counties in the vicinity of the gen-tie lines.

Wastewater

Wastewater service during construction of the gen-tie projects would be provided by portable chemical toilets with disposal at approved facilities in the region. During operation, the gen-tie facilities would not require wastewater service.

Solid Waste

The small amounts of non-reusable and non-recyclable solid waste generated by the WSP gen-tie projects would be hauled to the nearest solid waste disposal facilities in each affected county. In Kings County, solid waste would be disposed of at the CWML facility in the Kettleman Hills, which has a remaining capacity of about 15.8 million cubic yards. In Fresno County, solid waste would be hauled to the American Avenue Landfill which has a remaining capacity of approximately 29 million cubic yards (CalRecycle 2016c).

3.14.2. REGULATORY CONTEXT

Federal

There are no federal laws, orders, regulations, or standards that are related to utilities and service systems for the WSP solar facilities.

State

Senate Bills 610 and 267 (Water Supply Assessments)

Enacted in 2001, SB 610 sets forth requirements for CEQA documents that address the adequacy of water supply for large plans and projects. Under SB 610, cities and counties must incorporate a Water Supply Assessment (WSA) into any CEQA document for development projects that consist of 500 or more residential units, or the equivalent (e.g., shopping center greater than 500,000 square feet). The WSA must cover a 20-year projection of water demands and supplies in normal, dry, and multiple dry years, including existing and future users. In 2011, SB 267 amended the definitions of projects subject to SB 610 to include solar PV and wind projects that have water demands of more than 75 acre-feet per year (California Water Code Section 90912(a)(5)(B)).

It is estimated that upon buildout of the WSP solar facilities, the total operational water demands within WSP will be approximately 270 afy. Since this exceeds that 75 afy threshold established in SB 267, a WSA was prepared in conjunction with this EIR. The WSA is incorporated into this EIR as Appendix F, and it findings and conclusions are summarized under Impact UTS-1 later in this section.

California Water Code

Section 13751 of the California Water Code requires a Report of Well Completion to be filed with the Department of Water Resources (DWR) within 60 days of well completion. New wells must comply with California Department of Water Resources Well Standards as described in Water Resources Bulletins 74-81 and 74-90.

California Integrated Waste Management Act

In 1989, the legislature enacted the Integrated Waste Management Act (AB 939), which required all California cities and counties to divert 50 percent of its solid waste from being disposed in landfills. In 2008, the legislature enacted SB 1016, which did not change the required 50 percent diversion rate, but altered the method of measuring compliance by implementing a simplified measure of local jurisdictions' performance. Under SB 1016, diversion is measured by per capita disposal rate, based on two factors: a jurisdiction's population and its disposal as reported by disposal facilities (CalRecycle 2012b). In 2006, the latest year for which diversion data is available from CalRecycle, the diversion rate for the Kings County was 48 percent (CalRecycle 2006).

Sustainable Groundwater Management Act

In September 2014, Governor Brown signed the Sustainable Groundwater Management Act (SGMA). The goal of the legislation is to sustainably manage California's groundwater basins, identified as medium to critically over drafted subbasins. The SGMA required that all medium to critically over drafted subbasins identified by DWR be managed by a groundwater sustainability agency (GSA). The GSA is responsible for locally managing the groundwater subbasin through the development and implementation a Groundwater Sustainability Plan (GSP). Medium and high priority groundwater subbasins are required to submit their GSP by 2022 and critically overdrafted subbasin are required to submit their GSP by 2020. As the primary water purveyor in the Westside Subbasin, the Westlands Water District is the designated Groundwater Management Agency for the subbasin. DWR has designated the Westside Subbasin as a critically overdrafted basin for which a draft GSP is to be completed by WWD by January 31, 2020.

Westlands Water District

The Westlands Water District provides agricultural irrigation water to the WSP plan area from surface water deliveries provided by the U.S. Bureau of Reclamation from the Central Valley Project (CVP) facilities that convey captured Sierra snowmelt to the west side of the San Joaquin Valley. WWD water users conjunctively use surface water and groundwater, and quantities vary depending on the surface water allocation from the CVP's South of Delta agricultural allocation. Groundwater is pumped by growers within the District to augment surface supplies. In an ongoing effort to adapt to surface supply shortages, and to reduce groundwater overpumping, WWD provides funding for education and technology, enabling growers to effectively utilize surface water allotments through efficiencies. The District also monitors the water quality and quantity of pumped groundwater as part of its Water Management Plan (WWD 2013).

A key component of the District's Water Management Plan is water conservation. This program consists of the following elements.

- Irrigation Guide for water requirements per crop
- Water Conservation and Management Handbook
- Workshops and meetings on water management information
- Technical assistance and conservation computer programs
- Meter repair and update program

- Groundwater monitoring
- Pump efficiency tests
- Conjunctive use of supplies
- Irrigation System Improvement Program
- Satellite imagery purchased about once every two weeks from USGS

As the primary water purveyor in the DWR-designated critically overdrafted Westside Subbasin, WWD is serving as the GSA for the subbasin, effective November 1, 2016, pursuant to SGMA (described above).

Kings County

Kings County General Plan

The 2035 Kings County General Plan contains the following goals, objectives, and policies related to water supply and wastewater collection and treatment that are relevant to the proposed project:

Resource Conservation Element

A. Water Resources

RC GOAL A1 *Beneficially use, efficiently manage, and protect water resources while developing strategies to capture additional water sources that may become available to ensure long-term sustainable water supplies for the region.*

RC OBJECTIVE A1.1 *Maintain and Protect Existing Water Supplies.*

RC Policy A1.1.2: Review new discretionary development proposals, including new or expanded uses within agricultural zone districts, to ensure that there are adequate water supplies to accommodate such uses. Projects should provide evidence of adequate and sustainable water availability prior to approval of a tentative map or other land use approval.

RC OBJECTIVE A1.2 *Conserve and reuse water to provide for the efficient use of water resources.*

RC Policy A1.2.2: Require the use of low water consuming, drought-tolerant and native landscaping and other water conserving techniques, such as mulching, drip irrigation and moisture sensors, for new development.

RC OBJECTIVE A1.3 *Secure additional water supply sources to meet current and future water demand.*

RC Policy A1.3.2: Evaluate new urban development for compliance to SB610 and SB221 to ensure that adequate water supply sources and facilities are available to accommodate the new demand that would be created by such development.

RC OBJECTIVE A1.4 *Protect the quality of surface water and groundwater resources in accordance with applicable federal, state and regional requirements and regulations.*

RC Policy A1.4.4: Encourage and support the identification of degraded surface water and groundwater resources and promote restoration where appropriate.

RC OBJECTIVE A1.6 *Protect groundwater quality by applying development standards which seek to prevent pollution of surface or groundwater and net loss of natural water features.*

RC Policy A1.6.2: Support measures to ensure that water users do not unreasonably use groundwater resources.

Kings County Integrated Waste Management Plan

Adopted in 1995, the Kings County Integrated Waste Management Plan (CIWMP) was prepared in order to demonstrate how the County's solid waste would be reduced by 25 percent by 1995 and 50 percent by 2000, as required under AB 939. The CIMWMP addresses the long-term ability to ensure the implementation of countywide diversion programs and provision of adequate disposal capacity through siting of disposal and transformation facilities. The Kings County CIWMP incorporates the Source Reduction and Recycling Element (CIWMP) and Household Hazardous Waste Element (HHWE)(Kings County 1995).

Kings County Code of Ordinances

Plumbing Code/Sewage Disposal

Section 5-81 of the Kings County Code of Ordinances adopts the 2007 Edition of the California Plumbing Code as the County's plumbing code, except with respect to the location of sewage disposal systems, for which the County Plumbing Code sets forth its own specific requirements. These requirements relate to minimum setbacks and clearances of sewage disposal systems relative to property lines, wells, streams, and the like. The code also sets forth minimum leach field area requirements which correspond to the rated absorptive capacities of four broad soil types throughout the County, and the Code includes a map showing areas of the County covered by the four soil types. In general, the Code prescribes relatively greater leaching areas for soils with slower absorptive capacities. The soil types are assigned the letter identifiers "A," "B," and "C," with soil type "A" having the greatest absorptive capacity and type "C" having the least. There is a fourth category that applies to soils with very slow absorptive capacities, and for which engineered systems are required. In these areas, the design of septic systems is to be governed by several guidance documents including: "Guidelines for Waste Disposal from Land Developments," California Regional Water Quality Control Board, "Manual of Septic Tank Practice" by U.S. Dept. of Health, Education, and Welfare, and the "Uniform Plumbing Code," 1994 Edition (Kings County 2016b).

Well Permits

Chapter 14A of the Kings County Code of Ordinances requires the issuance of a County permit prior to construction, modification, repair, and destruction of water wells. The ordinance requires compliance with DWR's water well standards, and sets forth the application and review process and general permit conditions (Kings County 2016b).

Solid Waste Separation

Section 13-11 of the Code of Ordinances requires that recyclables be separated from solid waste at the premises where the solid waste is generated, and that recyclables be placed into different containers for collection (Kings County 2016b).

Kings County Improvement Standards

The Kings County Improvements Standards serves as an engineering reference for Kings County staff and private parties in the design and construction of improvements for public works projects and private development improvements. The standards include engineering design specifications for the construction of streets, water supply systems, storm drainage, and sewage disposal (Kings County 2003).

Fresno County

Since no portion of the Westlands Solar Park is located within Fresno County, the County's plans, policies and regulations are not applicable to WSP solar development. Transmission projects that are to be constructed or co-sponsored by an investor-owned utility (IOU) such as PG&E are subject to the sole permitting jurisdiction of the California Public Utilities Commission (CPUC) and are exempt from local jurisdiction. However, CPUC General Order 131-D requires public utilities to coordinate with local jurisdictions regarding consistency of their projects with local plans and policies (CPUC 1994). Transmission lines that may be privately owned (such as gen-ties) are not under CPUC jurisdiction, and thus are subject to Fresno County jurisdiction and may require the issuance of a conditional use permit from the County.

Fresno County General Plan

The Public Facilities and Services Element of the Fresno County General Plan several policies related to utilities and service systems. In general these policies call for reduction of groundwater use and implementation of water conservation measures, the prevention of water quality and health impacts associated with individual sewage disposal systems, and promotion of solid waste diversion through reduction, reuse, and recycling. The Public Facilities and Services Element is directly accessible at the following web address: http://www2.co.fresno.ca.us/4510/4360/General_Plan/GP_Final_policy_doc/Public_Facilities_Element_rj.pdf

3.14.3. ENVIRONMENTAL IMPACT ANALYSIS

SIGNIFICANCE CRITERIA

Based on the State CEQA Guidelines, Appendix G, the project would be considered to result in a significant impact to utilities and service systems if it would:

a. Have insufficient water supplies available to serve the project from existing entitlements and resources. (Impact UTS-1)

b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted). (Impact UTS-1)

c. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities or infrastructure, the construction of which could result in significant environmental effects. (Impacts UTS-1 and UTS-2)

d. Exceed the wastewater treatment requirements of the applicable Regional Water Quality Control Board. (Impact UTS-2)

e. Result in a determination by the wastewater treatment provider which serves the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments. (Impact UTS-2)

f. Not be served by a landfill with sufficient permit capacity to accommodate the project's solid waste disposal needs. (Impact UTS-3)

g. Not comply with federal, state, and local statutes and regulations related to solid waste. (Impact UTS-3)

IMPACTS AND MITIGATION

Impact UTS-1. Water Supply

***Westlands Solar Park*. The WSP solar facilities would require water supplies during the construction and operational phases; however, existing water supply sources and infrastructure would be adequate to serve the water demands of the WSP solar facilities without resulting in impacts to surface and groundwater resources, or requiring expansion of water supply facilities or additional water entitlements. (*Less-than-Significant Impact*)**

***WSP Gen-Tie Corridors*. The WSP gen-tie projects would require relatively small amounts of water for dust suppression during construction. Existing water supply sources and infrastructure would be adequate to serve the water demands of the gen-tie projects without resulting in impacts to surface and groundwater resources, or requiring expansion of water supply facilities or additional water entitlements. (*Less-than-Significant Impact*)**

This impact analysis addresses significance criteria 'a', 'b', and 'c' above.

Westlands Solar Park

Construction Water Supply

During grading and construction of the solar facilities, water would be regularly applied to exposed soils and internal access driveways for dust suppression. During earthwork, water would also be required in soil conditioning for optimum moisture content. Based on a water application rate of 0.2 af/ac, a typical 250 MW solar facility with a 2,500-acre site area would require 500 acre-feet of water during grading and construction. Under a scenario where two large solar facilities would have overlapping construction schedules, it is estimated that water demands during the peak construction year would be 729 acre-feet. (This scenario occurs in the latter stages of WSP buildout, when operational water demands would be 229 afy and construction water demands for two 250-MW solar projects would be 500 afy.) (WRP 2017).

Construction water would be pumped from existing agricultural wells to refill water trucks which would be stationed at the construction sites.

The annual agricultural water requirement for irrigation throughout Westlands Water District is approximately 2.5 af/ac/yr of land under irrigation. While most of the irrigation water requirements are met through CVP surface water deliveries, the contract water must be augmented by groundwater every year to meet irrigation needs. The rate of groundwater pumping varies substantially from year to year depending on the percentage of CVP water allocation that is available in a given year. During years when WWD receives most of its CVP water allocation, groundwater pumping provides a relatively minor portion of irrigation requirements. During years of severe drought, like the recent drought of 2012 through 2015, groundwater pumping increases to make up for shortfalls of surface water deliveries. In the 30-year period from 1988 to 2017, groundwater withdrawals within WWD averaged 273,000 AF per year, or the equivalent of approximately 0.48 acre-feet per irrigable acre within WWD. Westlands Water District is in the process of developing the sustainable yield of the subbasin through its compliance efforts under the Sustainable Groundwater Management Act (SGMA)(see Section *3.8. Hydrology and Water Quality* for a description of SGMA). Once the sustainable yield number is determined, the yield per acre will vary somewhat throughout WWD depending on localized hydrogeology.

As mentioned, the average water demand during SGF construction would be 0.2 af/ac/yr, compared to an average of 2.5 af/ac/yr for irrigated agriculture), a reduction of 2.3 af/ac/yr. Although all of the construction water would be obtained from groundwater, the 0.2 afy/ac. required would be well below the historical average agricultural pumping rate of 0.48 af/ac/yr over the past 30 years. Therefore, while groundwater pumping for SGF construction would continue for 12 years, the groundwater pumped

during construction would be substantially less than historical pumping volumes, and thus would very likely be within sustainable yield (currently in the process of being determined by WWD) for the groundwater basin on a per acre basis.

As noted above, a Water Supply Assessment (WSA) pursuant to SB 610 was prepared for the Westlands Solar Park and is contained in Appendix F of this EIR. The WSA concluded that groundwater supplies from the Westside Subbasin will meet construction demands for the WSP during the 12 year construction period, in addition to the demand from existing and other planned future uses (WRP 2017). (Note: While WSP construction would occur over a 12-year period, construction would take place in portions of 13 calendar years, beginning in late 2018 and ending in late 2030. As such, the WSA includes water demand estimates for each of the 13 years in which construction would take place.)

In summary, adequate supplies of water for construction of WSP solar facilities would be provided from existing groundwater wells within the WWD plan area; and the groundwater pumping for SGF construction would not exceed groundwater safe yield within the Westlands groundwater basin. Therefore, the water supply impacts associated with construction of WSP solar facilities would be *less than significant*.

Operational Water Supply

Upon completion, each WSP solar facility would require water supply for operations and maintenance activities such as panel washing, cleaning of equipment and vehicles, landscape irrigation, and for domestic uses such as drinking, flushing, and washing. As discussed in Chapter *2. Project Description*, it is estimated that the typical 250 MW solar facility within WSP would generate water demands of up to 33.8 afy, of which 30.7 afy would be used in panel washing (this estimate assumes 4 panel washing cycles per year). The remaining 3.1 afy would be used for other operations and maintenance activities. Upon full buildout of WSP solar facilities, the total operational water demands would be approximately 270.4 afy, or 0.135 af/ac/yr. Under current conditions, average District-wide water demand for lands under irrigation is 2.5 af/ac/yr. Thus the operation of WSP solar facilities would reduce water demands within the plan area by about 2.365 af/ac/yr on parcels currently under irrigated agriculture.

With the exception of water for domestic use (e.g., drinking, cooking, etc.), all water demands for the solar facilities would be met with nonpotable water. Potable water for domestic use would be provided by bottled water.

Non-potable water supplies for WSP solar facilities would be entirely provided by surface water delivered through the WWD conveyance facilities. Once construction is completed within each WSP solar facility, groundwater pumping would cease to be a source of water supply within that facility site. As discussed in Section *3.14.1. Environmental Setting* above, WWD maintains a permanent distribution system consisting of buried pipelines that convey surface water deliveries to farmlands throughout the District. Surface water for the WSP plan area is conveyed by a series of lateral pipes extending eastward from the San Luis Canal/California Aqueduct to metered valves located throughout the plan area. Water would be pumped directly into water trucks or piped to water storage tanks located at the solar facilities.

Surface water for WSP solar facilities would be provided through WWD's set asides for M&I (Municipal & Industrial) water as provided for in the District's Rules and Regulations. In 2011, the WWD Board of Directors approved an amendment to the District rules and regulations that will allow the delivery of up to 5 af/year of M&I water per 160 acres of solar development (WWD 2013a). As discussed above, it is

estimated that the WSP solar facilities would have operational water demands of up to 0.135 af/ac/yr, or about 2.16 af per 160 acres per year. Thus WSP operational water demands would fall well within the 5 af per 160 acre limit set by WWD for solar facilities. During periods of prolonged drought and curtailment of CVP surface water deliveries, any shortages of delivered M&I water could be filled by acquisition of additional water supply on the open market.

It is possible that periodic shortages of imported surface water could prompt solar facility operators to turn to groundwater pumping to supplement surface water deliveries. Under a hypothetical worst-case scenario where all operational water supplies were temporarily obtained by groundwater pumping, the total annual WSP groundwater withdrawals would be 270.4 afy, or 0.135 af/ac/yr. This pumping volume would still be low compared to historical average agricultural pumping rates of 0.48 af/ac/yr over the past 30 years.

As noted above, a Water Supply Assessment (WSA) pursuant to SB 610 was prepared for the Westlands Solar Park and is contained in Appendix F of this EIR. The WSA concluded that District water supplies will meet projected operational water demands for the WSP over a 20 year planning horizon, in addition to the demand from existing and other planned future uses. No supply deficiencies are expected in normal, dry, and multiple dry years for operation of the Westlands Solar Park (WRP 2016).

Based on the above discussion, the water supplies available to WSP solar facilities would be more than adequate to reliably meet their operational water demands, without impacts to groundwater resources. Therefore, the water supply impacts associated with the operation of WSP solar facilities would be *less than significant*.

In summary, the water demands for construction and operation of WSP solar facilities would be met from existing water supply sources without resulting in groundwater withdrawals above the safe yield of the groundwater basin. Therefore, the water supply impacts associated with the development of the WSP solar facilities would be *less than significant*.

WSP Gen-Tie Corridors

During construction, the gen-tie projects would require water for dust suppression at work sites and staging areas, and on access roads. The water would be obtained from agricultural wells or municipal water sources in the vicinity and transported in water trucks to the work sites and access roads. Drinking water for work crews would be provided by bottled water. Little or no water would be required during operation of the gen-tie facilities. Existing water supply sources would be adequate to provide the relatively small amount of water required for construction of the gen-tie projects, and no expansion of water facilities or additional water entitlements would be required. Therefore, the impacts of the gen-tie projects upon water supplies would be *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

Impact UTS-2. Wastewater Treatment and Disposal

***Westlands Solar Park*. The WSP solar facilities would each have septic tanks that would be pumped periodically for off-site disposal at an approved wastewater facility. It is not expected that any WSP solar facility would utilize septic tank and leachfield systems for on-site wastewater treatment and disposal. (*Less-than-Significant Impact*)**

***WSP Gen-Tie Corridors*. The wastewater treatment and disposal needs of the WSP gen-tie projects during construction would be provided by portable chemical toilets, and there would be no sanitary facilities required during operation of the gen-tie facilities. Therefore, the impacts of the WSP gen-tie projects in terms of wastewater treatment and disposal would be negligible. (*Less-than-Significant Impact*)**

This impact analysis addresses significance criteria 'c', 'd', and 'e' above.

Westlands Solar Park

During construction of each WSP solar facility, the domestic wastewater generated by construction workers would be accommodated through the use of portable toilet facilities, with regular cleanout and disposal at an approved disposal facility. The potential water quality impacts due to construction wastewater would be *less than significant*.

Upon completion, the operational wastewater disposal needs for each WSP solar generating facility would be provided by individual septic tanks which would be emptied as needed by septic tank pumping contractors and disposed of at an approved wastewater treatment facility. For smaller solar facilities, the sanitary needs of workers visiting the solar facilities for maintenance activities may be provided by portable chemical toilets that would be serviced by a private contractor. Therefore, the potential impacts resulting from operational wastewater generation would be *less than significant*.

It is not expected that any WSP solar facilities would include onsite leachfields as a method of wastewater treatment and disposal. If any individual septic tank and leachfield systems are proposed for WSP solar facilities, such systems would be located, designed, constructed, operated, and maintained in accordance with Regional Water Quality Control Board and County Health Department requirements and the specific design requirements of the Kings County Plumbing Code. As discussed in Section *3.14.3. Regulatory Context* above, the required amount of leachfield area required by the Plumbing Code would depend on the rated absorptive capability of the underlying soil, with soils rated from "A" to "C" with decreasing absorptive capacity, and with a final soil classification with very slow absorption capability where the Plumbing Code requires engineered systems. The majority of WSP soils have a "B" classification, indicating a moderate absorptive capacity, and a small area at the west end of the plan area has an "A" classification, indicating greater absorptive capacity. The size of the required leaching areas and overall usable disposal areas increases as absorptive capacity decreases. In the northeastern portion of the WSP plan, representing approximately 30 percent of the plan area, the soils have very low absorptive properties and therefore the County would require engineered systems for wastewater disposal in this area. In these areas, the septic systems are to be designed depending on

specific soil conditions at the leachfield location, with the system designs governed by County and state design requirements, and subject to approval by the County Health Department. Any septic tank and leachfield systems that might be proposed for an individual solar facility would be subject to strict engineering and health standards in order to prevent water quality impacts.

WSP Gen-Tie Corridors

During construction of the WSP gen-tie projects, the sanitary needs of construction workers would be provided by portable chemical toilets that would be serviced by a private contractor. Operation of the gen-tie facilities would involve periodic inspection and maintenance activities by workers visiting the sites, for which there would be no need for permanent wastewater facilities. As such, there would be no permanent wastewater facilities associated with the WSP gen-tie projects. Therefore, the impact of the gen-tie projects upon wastewater treatment and disposal would be *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

Impact UTS-3. Solid Waste Service and Landfill Capacity

***Westlands Solar Park*. The WSP solar development would increase the demand for solid waste collection and disposal service; however, the relatively small increase in solid waste generation from the WSP solar projects would not have an adverse effect on the capacity of existing landfill facilities. (*Less-than-Significant Impact*)**

***WSP Gen-Tie Corridors*. The WSP gen-tie projects would generate small amounts of solid waste, which would be accommodated by landfills in the vicinity with minimal effects on overall landfill capacity. (*Less-than-Significant Impact*)**

This impact analysis addresses significance criteria 'f' and 'g' above.

[Note: The following discussion addresses non-hazardous waste only. Hazardous waste disposal is addressed in Section *3.7. Hazards and Hazardous Materials*.]

Westlands Solar Park

The development of WSP solar facilities would temporarily generate construction waste during the development phase, and would generate solid waste during operation of the PV solar facilities. The solid waste impacts during both the construction and operational phases are discussed in turn below.

Construction Phase

During construction of the solar facilities, the waste generated would primarily consist of non-hazardous waste materials such as packing containers and materials, waste lumber, wood pallets, scrap metal, glass and paper. (Since site clearing would involve mulching or plowing under of crop remnants, it is anticipated that greenwaste generation would be minimal if anything.) Based on construction waste generation rates at a similar solar PV project in northern Los Angeles County, the construction of solar projects within WSP is estimated to generate approximately 26.5 cubic yards (cy) of construction waste per MW of installed generating capacity (LA County 2010, p. 4-51). [1 cubic yard (cy) of construction waste is equivalent to approximately 1 ton of construction waste (CalRecycle 2016b).] It is anticipated that the WSP solar development would be installed at an average rate of 167 MW per year over 12 years. Thus construction of the 2,000 MW of WSP solar capacity would generate a total of approximately 53,000 tons (or cy), or about 17.7 tons/cy per day on average (assuming 250 work days per year over 12 years). Much of the construction waste materials would be reusable (e.g., wood pallets and packing crates), or recyclable (e.g., clean lumber, scrap metal, paper, glass), and doing so has been shown to be cost effective (CalRecycle 2004). Therefore, although Kings County does not have a Construction and Demolition (C&D) Waste Diversion Ordinance in place, it is reasonable to assume that at least 50 percent of the construction waste would be recycled or reused. Thus approximately 8.85 tons of construction waste from WSP would be disposed of at a Class III landfill per day. Assuming that all of the non-recycled waste would be hauled to the Chemical Waste Management Landfill (CWML) site in the Kettleman Hills, the 8.85 tons of daily construction waste generated at WSP would represent about 1.0 percent of the current the daily average solid waste disposal (877 tons per day in 2015) at the CWML. With the addition of WSP construction waste, the total daily solid waste disposed at CWML would remain well below the 2,000 ton per day permitted limit. Additionally, the total 53,000 tons (or 53,000 cy) of construction waste generated by WSP over the 12-year construction period would represent 0.34 percent of the remaining 15.8 million cy capacity of CWML. Both the daily disposal rate and the total construction waste generated at WSP would represent small increases in solid waste accepted at CWML (Waste Management 2016).

Operational Phase

During operation of the WSP solar facilities, the non-hazardous waste generated would include typical refuse generated by workers and small office operations such as scrap metal and machine parts, broken or defective electrical components, oily rags, packing material from deliveries, paper, cardboard, plastic, empty containers, and miscellaneous solid waste. Each solar facility operator within WSP would contract with a commercial waste collection service which would haul the waste to the Kings Waste and Recycling Authority Material Recovery Facility in Hanford for sorting and recycling and/or transport the non-recyclable waste to local landfill site.

Based on operational solid waste generation rates at a similar solar PV project in northern Los Angeles County, the solar projects within WSP are estimated to generate approximately 0.9 cubic yards (cy) of solid waste per year per MW of installed generating capacity (LA County 2010, p. 4-53). [Approximately 4 cubic yards (cy) of uncompacted solid waste from commercial/industrial sources is equivalent to approximately 1 ton of municipal solid waste (USEPA 1997).] Upon full operation, the solar facilities within WSP would generate a total of approximately 1,800 cubic yards, or approximately 450 tons of non-hazardous solid waste per year. Assuming that at least 50 percent of the solid waste would

diverted through recycling, the remaining 225 tons (900 cy) of solid waste from WSP would be disposed of at a Class III landfill per year (or 0.9 tons per day). With compaction, the landfill volume would be reduced by about half that, or 450 cy. Assuming that all of the non-recycled waste would be hauled to the Chemical Waste Management Landfill (CWML) site in the Kettleman Hills, the 225 tons of annual solid waste generated at WSP would represent about 0.1 percent of the current the annual solid waste disposal (219,316 tons in 2015) at the CWML. The solid waste generated from WSP operations would total about 0.9 tons per day, increasing the average daily solid waste disposed at CWML to 878 tons per day, which would remain well below the 2,000 ton per day permitted limit. Both the daily disposal rate and the total non-hazardous solid waste generated at WSP would represent small increases in solid waste accepted at CWML.

As discussed in Section *3.14.1. Environmental Setting*, the CWML has a remaining capacity of approximately 15.8 million cubic yards, and is not anticipated to reach capacity until at least 2030. Assuming the first WSP solar facility is completed in 2018 and the final solar facility is completed in 2030, the total solid waste generated by operation of WSP solar facilities during that period that would be approximately 10,800 cy (assuming 50 percent diversion, the amount landfilled would be approximately 5,400 cy [1,350 tons]). When combined with the 53,000 cy of construction waste generated during that period (or 27,500 cy [27,500 tons] assuming 50 percent diversion), the total landfilled solid waste from construction and operation of WSP solar facilities would be about 32,900 cy (28,850 tons) by 2030. This represents 0.2 percent of the total remaining capacity of the CWML, or less than 15 days of permitted disposal at the CWML (an average of one day per year), and would not appreciably shorten its operating life. Therefore, the impacts of WSP solar facility development upon landfill facilities would be *less-than-significant*.

With respect to solid waste service, the WSP solar project would be served by commercial haulers. It is expected that the increased service demands from the WSP solar projects would be met through incremental increases in staff and equipment, which would be funded through fees for service. Therefore, the impacts WSP solar development upon solid waste collection service in Kings County would be *less than significant*.

All waste generated by construction and operation of WSP solar facilities would be disposed of in accordance with federal, state, and local regulations. The development WSP solar facilities would not require the development of new landfills, nor would it require existing landfills to be expanded. The recycling practices within each WSP solar facility during construction and operation would reduce the amount of solid waste that would be landfilled. Based on the above discussion, the impact of WSP solar facility construction and operation on existing landfill facilities would be *less than significant*.

WSP Gen-Tie Corridors

The construction of the WSP gen-tie projects would generate small amounts of solid waste, which would mainly consist of scrap materials and debris. Waste materials would be salvaged for reuse or recycled to the extent practicable. Other non-hazardous construction materials would be disposed of at municipal landfills, such as the CWML facility in Kings County. During operation of the completed gen-tie facilities, little or no solid waste would be generated. The small amounts of solid waste generated by construction of the gen-tie projects, and the negligible amount of solid waste generated by operation of the gen-tie facilities, would have minimal effects on the remaining capacities of the landfills in the

vicinity. Therefore, the impacts of the WSP gen-tie projects upon landfill facilities would be *less-than-significant*.

All waste generated by construction and operation of the WSP gen-tie lines would be disposed of in accordance with federal, state, and local regulations. The WSP gen-tie facilities would not require the development of new landfills, nor would it require existing landfills to be expanded. The salvage and recycling practices implemented during construction and operation would reduce the amount of solid waste that would be landfilled. Based on the above discussion, the impact of the WSP gen-tie facilities on existing landfill facilities would be *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

Cumulative Impacts

Impact UTS-4. Cumulative Utilities and Service Systems Impacts

***Westlands Solar Park*. The development of the WSP solar facilities combined with other planned and proposed development in the area would require water supplies, wastewater disposal, and solid waste disposal. However, the cumulative impact of these planned and proposed projects upon these utilities and service systems would be less than significant. (*Less-than-Significant Cumulative Impact*)**

***WSP Gen-Tie Corridors*. The construction of the WSP gen-tie projects would generate minimal demand for water supplies, wastewater disposal, and solid waste disposal. Thus, while cumulative impacts to these services from other approved and pending projects may be cumulatively significant, the contribution of the WSP gen-tie projects to any such cumulative impact would be not cumulatively considerable. Therefore, the cumulative impact to utilities and service systems associated with the WSP gen-tie projects would be less than significant. (*Less-than-Significant Cumulative Impact*)**

Geographic Scope of Cumulative Analysis

The scope of analysis for utilities and services systems varies depending on the service under consideration. For water supply, the geographic scope of analysis is the WWD service area since water supplies for WSP solar facilities operations would be provided by WWD. For wastewater disposal, the geographic scope of analysis includes the western portions of Kings and Fresno Counties that are located within the Westlands Hydrologic Area (HA) of the Tulare Basin Hydrologic Region (this HA generally coincides with WWD service area boundaries in the WSP area). For solid waste disposal, the geographic

scope of analysis encompasses the service areas of the solid waste collection services and the landfill facilities.

Westlands Solar Park

Near Term

Water Supply

The WSP solar facilities will obtain construction water supplies from groundwater wells. Operational water supplies would be obtained from M&I surface water deliveries from WWD which would be conveyed to the WSP plan area through the existing WWD water distribution system. Cumulative impacts to groundwater resources are considered in the context of the Westside Subbasin, and impacts to surface water supplies are considered within the context of the WWD service area. The boundaries of the Westside Subbasin roughly coincide with the boundaries of the WWD service area. In addition to the Westlands Solar Park, there are currently 28 solar PV projects that are approved, pending, completed, or partially completed within the Subbasin/WWD boundaries. (Note: This does not include the approved and partially completed Westside Solar project or the proposed Aquamarine Solar project since they are both located within the WSP plan area.) The total land area covered by these other projects is approximately 22,599 acres, with a total generating capacity of 2,478 MW. Based on an average construction water demand rate of 2.0 af/MW (or 0.2 af/ac, on average, based on land requirements of approximately 10 acres per MW), these other projects would consume a total of 4,956 acre-feet of water during construction (plus 4,000 acre-feet for WSP, for a cumulative total of 8,956 acre-feet). It is assumed that all construction water would be obtained from local groundwater sources within the subbasin, and it is expected that construction of each acre of solar project would take far less than one year. The consumption rate of 0.2 af/yr/ac would be low compared to historical average agricultural pumping rates of 0.48 af/ac/yr over the past 30 years. Upon completion, operational water demands would be approximately 0.0135 af/ac/yr. Although the WSP solar projects would obtain operational water supplies from WWD M&I deliveries, it is expected that operational water for the other solar projects would be obtained from groundwater sources within the subbasin. These operational water demands would be well below the historical average groundwater pumping volumes of 0.48 acre-feet per acre. Although not all of the cumulative project sites are under irrigated agriculture under pre-project conditions, it is expected that the cumulative solar development would result in a substantial reduction in groundwater pumping at the affected sites.

In summary, neither the short-term construction of the other planned projects within the subbasin, nor the long-term operational water demands from each project, would exceed the safe yield of the groundwater basin. Therefore, the construction and operational water demands for the other planned projects in the subbasin could be met from existing groundwater sources without contributing to cumulative overdraft of the subbasin. Therefore, the cumulative impact to groundwater resources resulting from construction and operation of the cumulative projects within the study area in the near term would be *less than significant*.

Wastewater Treatment and Disposal

The WSP solar facilities are expected to utilize septic holding tanks or chemical toilets, which would be serviced by a pumping contractor with disposal at an approved facility. Although not currently anticipated,

it is possible that larger solar facilities within WSP may utilize septic tank and leachfield systems for disposal of domestic wastewater at their O&M facilities. As discussed under Impact UTS-2 above, any such septic systems would be designed, constructed, and maintained in compliance with County and State standards, and would conform to minimum required setback distances from wells and watercourses. As such, the potential for contamination from any WSP septic systems, individually or collectively, would be negligible. Considering that solar PV projects are typically operated by off-site contractors with no permanent on-site staff, it is expected that the other cumulative solar PV projects would likewise utilize septic holding tanks or chemical toilets, and that no septic tank and on-site leachfield systems would be constructed. If any of the cumulative projects plan to utilize septic and leachfield systems, such systems would be subject to County and State design standards to ensure proper functioning of the systems and avoid groundwater contamination. As such, the potential for groundwater contamination from near-term cumulative development in the study area is negligible. Therefore, the potential for water quality impacts to occur under near-term cumulative conditions is *less-than-significant*.

Solid Waste

Since management of solid waste occurs on a County-wide basis, the geographic scope of analysis for cumulative solid waste impacts associated with WSP solar development consists of the lands within Kings County. The current list of pending and approved projects in Kings County is shown in Table PD-9 in the Chapter *2. Project Description.*

As shown in Table PD-9, there are 26 other pending, approved, completed or partially completed solar PV projects in Kings County, plus one solar project within NAS Lemoore, with a total electrical generating capacity of 1,387 MW (again, not including the 22 MW Westside Solar project or the 250 MW Aquamarine Solar project located within WSP). With the addition of the 2,000 MW of solar generation within WSP, the total cumulative generation would be 3,387 MW. During construction, solid waste would be generated at the rate of 26.5 cy (or tons) per MW, or 89,756 cy (or tons) in total. Assuming 50 percent diversion through salvage and recycling, the total disposal to landfill would be 44,878 cy (or tons).

During operation of the completed PV facilities, solid waste would be generated at the at 0.9 cy per MW per year, or 3,048.3 cy annually, in total. Assuming half of this solid waste is diverted, the remaining 1,524.2 cy (or 381 tons) would be landfilled annually. If, for purposes of analysis, it is conservatively assumed that all of these cumulative solar facilities were fully operational in 2018, the total operational solid waste generated through 2030 would be 19,815cy (or 4,954 tons).

The total solid waste generation (after diversion) from the construction and operation of the cumulative solar projects through 2030 would be approximately 49,832 tons. Assuming that all of the non-recycled waste would be hauled to the Chemical Waste Management Landfill (CWML) site in the Kettleman Hills, this would represent 0.3 percent of the total current remaining 15.8 million tons of capacity at the CWML through 2030. Stated differently, the total cumulative solid waste generation would be equivalent to 25 days of permitted solid waste disposal of 2,000 tons per day at the CWML facility.

With respect to solid waste service, the cumulative solar projects would be served by commercial haulers. It is expected that the increased service demands from the cumulative projects would be met through incremental increases in staff and equipment, which would be funded through fees for service. Therefore, the impacts of near-term cumulative development upon solid waste collection service in Kings County would be *less than significant*.

All waste generated by construction and operation of the cumulative projects would be disposed of in accordance with federal, state, and local regulations. The development of the cumulative projects would not require the development of new landfills, nor would it require existing landfills to be expanded. The recycling practices within each cumulative solar facility during construction and operation would reduce the amount of solid waste that would be landfilled. Based on the above discussion, the cumulative impact of WSP solar facility construction and operation on existing landfill facilities would be *less than significant*.

Summary

Based on the discussion above, the near-term cumulative impacts associated with WSP solar development on utilities and service systems would be *less-than-significant*.

Far Term

Water Supply

Under far-term conditions, the WWD service area could be subject to substantial solar PV development, given that solar PV facilities are conditionally permitted uses on the majority of agricultural lands in Kings County, and are also conditionally permitted in agricultural areas in Fresno County. Since the other non-agricultural uses that may be developed within the agricultural areas of the WWD service area are unforeseeable, and are limited under applicable general plan and zoning designations, this discussion is focused on solar PV development. While the locations, numbers, and sizes of solar PV developments within the WWD service area cannot be predicted, the water consumption impacts of such development can be analyzed because solar PV projects are fairly uniform in character and can be typified in terms of demands for water.

During construction of solar PV facilities, average water use would be approximately 0.2 af/ac, primarily for dust control, which would be obtained from groundwater wells. This consumption rate would be low compared to historical average agricultural pumping rates of 0.48 af/ac/yr over the past 30 years. Upon completion, operational water demands would be approximately 0.0135 af/ac/yr, which would also be substantially below historical average water withdrawals from the groundwater basin. Although the WSP solar projects would obtain operational water supplies from WWD M&I deliveries, it is assumed that operational water for the other future solar projects would be obtained from groundwater sources within the subbasin. Therefore, the impacts associated with groundwater pumping for cumulative development would be *less than significant*.

In summary, the impact of far-term cumulative development upon groundwater resources and surface water supplies would be *less than significant*.

Wastewater Disposal

Under far-term conditions, development within the western Kings County and western Fresno County study area would proceed in accordance with the respective County general plans. While predicting the future development pattern is somewhat speculative, the agricultural land use designations applicable to the study area could allow substantial additional solar PV development. In addition, while there are few dairies currently operating in the study area, they would be permitted throughout the portions of the

study area located south of Kansas Avenue under the Dairy Element of Kings County, and would also be permitted under the Fresno County General Plan. The potential cumulative effect of wastewater disposal from these two land uses under far-term conditions is discussed below.

While substantial solar PV development could occur within the marginal quality farmlands within the study area, it is expected these facilities would be operated by staff stationed at off-site locations. Thus it is expected that all solar facilities would be served by septic holding tanks or chemical toilets, and that none would have individual septic tank and leachfield systems constructed on site. In the unlikely event that any such septic systems are proposed, they would be required to be designed and constructed in accordance with County and State standards to minimize the potential for nitrate contamination of the groundwater. Therefore, it is highly unlikely that even substantial solar PV development in the study area under far-term conditions would result in cumulative contamination of the groundwater.

With respect to dairy operations, it is possible that a considerable number of new dairy operations could become established in the study area under far-term conditions. While they are permitted throughout large portions of the study area under both the Kings County and Fresno County general plans, the permitting of new and expanded dairies in Kings County would be based on a determination of the maximum allowed herd size in each case through calculations of the carrying capacities of the proposed dairy sites (Kings County 2002, p. DE-9). These calculations would be made in accordance with the methodology required by the Central Valley Regional Water Quality Control Board for establishing nutrient loading levels to reduce the potential for water quality impacts. It is expected that these permit processes, in addition to the design and management requirements placed by the counties on new and expanded dairy operations, particularly for manure management, would minimize the potential for water quality impacts, on an individual project and cumulative basis. Therefore, while the locations, numbers, and sizes of new and expanded dairies that could be established in the study area under far-term conditions cannot be predicted, the operation of the County permit processes and Regional Board oversight would minimize the potential for cumulative nitrate contamination of the groundwater within the study area.

In summary, the potential water quality impacts from wastewater disposal under far-term cumulative conditions would be *less than significant*.

Solid Waste

Under far-term conditions, it was estimated in the Kings County General Plan EIR that the net increase in solid waste generation in Kings County would be approximately 8,784 tons per year (Kings County 2009c, p. 4.15-16). However, the GP EIR did not consider solid waste generation from solar PV facilities, which was unforeseeable at the time the GP EIR was prepared. For purposes of this analysis, it is assumed that the 4,954 tons of solid waste generated annually by operation of the near-term solar PV projects, including the WSP solar facilities, would double to about 9,908 tons with the addition of new solar projects by the time of GP buildout. This would bring the total estimated net increase in annual solid waste generation to 18,692 tons per year (after diversion) under far-term conditions. This would be approximately 74.8 tons per day (assuming 250 disposal days per year), or 3.7 percent of the daily permitted maximum 2,000 tons per day at the CMWL. This would not represent a significant increment in daily solid waste volume received at the CMWL. (The total increase in far-term solid waste generation from solar project construction would be about 89,756 tons through 2030, assuming a doubling of near-term cumulative solar projects. This increment would represent approximately 0.5 percent of the remaining capacity of the CMWL facility and would not be significant.

As noted, the CMWL is expected to reach its full permitted capacity by 2030, with the actual closing date depending on disposal rates. Thus it is likely that the CWML will reach capacity prior to the General Plan horizon year of 2035. The California Integrated Waste Management Act requires that counties prepare a solid waste management plan that plans for solid waste disposal sites at least 15 years into the future. Should CMWL become full prior to buildout of the 2035 General Plan, the Kings County Waste Management Authority has plans to open another landfill in Kettleman City, which once in operation is expected to serve the County through 2047 (Kings County 2009c, p. 4.15-5). In addition, future development under the 2035 General Plan would be required to comply with the Kings County Countywide Integrated Waste Management Plan. This plan includes source reduction, recycling, composting, special waste and household waste programs, all of which strive to reduce overall solid waste generation. Implementation of these programs may further extend the life of existing and planned landfills that would serve the County.

Based on the above discussion, there would be sufficient capacity at existing and planned landfill facilities to accommodate cumulative solid waste generation in Kings County in the far term. Therefore, the far-term cumulative impacts in terms of solid waste disposal would be *less than significant*.

Summary

Based on the above, the far-term cumulative impacts with respect to utilities and service systems would be *less-than-significant*.

WSP Gen-Tie Corridors

For water supply and wastewater disposal, there are no centralized facilities in the vicinity of the WSP gen-tie corridors. Given the very low water demands and wastewater service demands generated by gen-tie facilities, any potential cumulative impacts would be localized. The demand for solid waste collection and disposal service would be focused on the western portions of the Kings and Fresno counties, and particularly the landfills serving those areas.

Near Term

The near-term cumulative analysis of utilities and service systems impacts considers the approved, pending, and completed projects within the western areas of Kings and Fresno counties. These projects are listed in Tables PD-9 and PD-10, and are shown in Figures PD-9 and PD-10, in Chapter *2. Project Description*. The cumulative projects consist of solar PV generating facilities and two transmission projects – the Gates to Greg Transmission Project (Central Valley Power Connect), and the Westside Transmission Project.

Water Supply

As discussed under Impact UTS-1 above, the water demands during gen-tie project construction would be very low and would consist of water required for dust suppression on tower sites, staging areas, and access roads. Construction water would be obtained from nearby agricultural wells or municipal sources and hauled to the work sites in water trucks. Operational water demands would be negligible. The water demands from the other cumulative transmission and solar projects would also be relatively low for both construction and operational conditions. It is expected that these projects would all rely on

existing wells or municipal sources for their limited water supply requirements, and that no expansion of water facilities or additional water entitlements would be required. Therefore, the near-term cumulative impact to water supplies and facilities associated with the WSP gen-tie projects would be *less than significant*.

Wastewater

For the cumulative transmission and solar projects, it is expected that wastewater service during construction would be provided by portable chemical toilets, and operational wastewater disposal needs would be provided by septic holding tanks for the solar projects, and would not be required for the transmission projects. The chemical toilets and septic holding tanks would be serviced by contractors and would not result in on-site water quality impacts. Therefore, the near-term cumulative impact to wastewater treatment and disposal facilities associated with the WSP gen-tie projects would be *less than significant*.

Solid Waste

The cumulative transmission and solar projects would generate relatively minor amounts of solid waste during construction and very little waste during operations. As discussed in Section *3.14.1. Environmental Setting*, the nearest landfills in each affected county (CWML in Kings, and American Avenue in Fresno) both have substantial remaining capacity that would accommodate the limited solid waste volumes generated by the cumulative transmission and solar projects. Therefore, the near-term cumulative impact to solid waste disposal facilities associated with the WSP gen-tie projects would be *less than significant*.

Far Term

Water Supply

In 2030, the WSP gen-tie facilities will have been completed and operational water demands would be negligible. Development under the general plans of Kings and Fresno counties would result in additional development and population that would increase demand for water supplies. In accordance with SB 610 and related state laws, sufficiency of water supply would need to be demonstrated prior to approval of substantial development. Given that water supply demands from the operation of WSP gen-tie facilities would be negligible, as discussed above, the contribution of the WSP gen-tie facilities to any cumulative water supply impact would be *not cumulatively considerable*. Therefore, the far-term cumulative impact to water supply associated with the WSP gen-tie facilities would be *less than significant*.

Wastewater

In 2030, the WSP gen-tie facilities will have been completed and would generate no wastewater. Development under the general plans of Kings and Fresno counties would result in additional development and population that would increase demand for wastewater treatment and disposal facilities. Given that operating WSP gen-tie facilities would generate no wastewater, as discussed above, the contribution of the WSP gen-tie facilities to any cumulative wastewater facilities impact would be *not cumulatively considerable*. Therefore, the far-term cumulative impact to wastewater facilities associated with the WSP gen-tie facilities would be *less than significant*.

Solid Waste

In 2030, the WSP gen-tie facilities will have been completed and would generate little or no solid waste. Development under the general plans of Kings and Fresno counties would result in additional development and population that would increase solid waste generation and demand for disposal capacity. Given that operating WSP gen-tie facilities would generate little or no solid waste, as discussed above, the contribution of the WSP gen-tie facilities to any cumulative solid waste impact would be *not cumulatively considerable*. Therefore, the far-term cumulative impact to solid waste facilities associated with the WSP gen-tie facilities would be *less than significant*.

Mitigation Measures:

***Westlands Solar Park*. No mitigation is required.**

***WSP Gen-Tie Corridors*. No mitigation is required.**

REFERENCES/BIBLIOGRAPHY – UTILITIES AND SERVICE SYSTEMS

CalRecycle 2004 — California Department of Resources Recycling and Recovery (CalRecycle) Website. 2004. *Construction & Demolition (C&D) Waste Diversion in California*. January. http://www.calrecycle.ca.gov/condemo/CaseStudies/DGSDiversion.pdf

CalRecycle 2006 — California Department of Resources Recycling and Recovery (CalRecycle) Website. 2006. *Jurisdiction Diversion/Disposal Rate Summary*. http://www.calrecycle.ca.gov/LGCentral/Reports/DiversionProgram/JurisdictionDiversion.aspx

CalRecycle 2012 — California Department of Resources Recycling and Recovery (CalRecycle) Website. 2012. *SB 1016 Overviews*. http://www.calrecycle.ca.gov/lgcentral/Events/SB1016Oview/default.htm

CalRecycle 2016a — California Department of Resources Recycling and Recovery (CalRecycle) Website. 2016. *C&D Debris Recyclers Database*. http://www.calrecycle.ca.gov/FacIT/Facility/Search.aspx?Activity=CD+Processing#LIST

CalRecycle 2016b — California Department of Resources Recycling and Recovery (CalRecycle) Website. 2016. *Construction/Demolition and Inert Debris Tools and Resources – Calculations*. http://www.calrecycle.ca.gov/SWFacilities/CDI/Tools/Calculations.htm

CalRecycle 2016c — California Department of Resources Recycling and Recovery (CalRecycle) Website. 2016. *Facility/Site Summary Details*. http://www.calrecycle.ca.gov/SWFacilities/Directory/Search.aspx

Fresno County 2000b — County of Fresno. 2000. *Fresno County 2000 General Plan –Policy Document*. October. http://www2.co.fresno.ca.us/4510/4360/General_Plan/GP_Final_policy_doc/Table_of_Contents_rj_blue.pdf

Kings County 1995 — Kings County, 1995. *Kings County Countywide Integrated Waste Management Plan*. Adopted April 1995. http://www.countyofkings.com/home/showdocument?id=3092

Kings County 1998 — Kings County. 1998. Kings County Building Ordinance, Chapter 5 – Kings County Code of Ordinances. Adopted by Ordinance No. 567, January 15, 1998. http://www.countyofkings.com/home/showdocument?id=4068

Kings County 2002 — Kings County. 2002. *Dairy Element of the Kings County General Plan*. Adopted July 30, 2002. http://www.countyofkings.com/home/showdocument?id=4078

Kings County 2003 — Kings County. 2003. *County of Kings Improvement Standards*. May 6. http://www.countyofkings.com/home/showdocument?id=3098

Kings County 2009c — Kings County. 2009. *Draft EIR – 2035 Kings County General Plan Update*. June. http://www.countyofkings.com/home/showdocument?id=5897

Kings County 2010a — Kings County. 2010. *2035 Kings County General Plan*. Adopted January 26, 2010. http://www.countyofkings.com/departments/community-development-agency/information/2035-general-plan

Kings County 2012d — Kings County Website. 2012. *Kings County Division of Environmental Health – Listing of Kings County Solid Waste Facilities*. http://www.countyofkings.com/departments/environment-health-service/solid-waste/king-s-county-solid-waste-facilities

Kings County 2017 — Kings County. 2016. *Kings County Development Code, Appendix A – Kings County Code of Ordinances*. Effective April 27, 2017. http://www.countyofkings.com/departments/community-development-agency/information/zoning-ordinance

Kings County 2016 — Kings County. 2016. *Kings County Code of Ordinances, as amended through October 4, 2016*. https://www.municode.com/library/ca/kings_county/codes/code_of_ordinances

LA County 2010 — County of Los Angeles. 2010. *AV Solar Ranch One Draft EIR*. June. http://planning.lacounty.gov/assets/upl/case/project_r2009-02239_deir.pdf

SWRCB 2010 — California State Water Resources Control Board. 2010. *Groundwater Information Sheet – Salinity*. Division of Water Quality, GAMA Program. Revised March 2010 http://www.swrcb.ca.gov/water_issues/programs/gama/docs/coc_salinity.pdf

UCD 2012 — UC Davis, Center for Watershed Sciences (UCD). 2012. *Addressing Nitrate in California's Drinking Water – With Focus on Tulare Lake Basin and Salinas Valley Groundwater*. Report for the State Water Resources Control Board Report to the Legislature. California Nitrate Project, Implementation of Senate Bill X2 1. January 2012. http://groundwaternitrate.ucdavis.edu/

USBR 2006 — U.S. Bureau of Reclamation. 2006. *San Luis Drainage Feature Re-Evaluation – Final EIS*. June 8. http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=61 Accessed

USBR 2015 — U.S. Bureau of Reclamation. 2015. *Westlands v. United States Settlement*. October. http://wwd.ca.gov/wp-content/uploads/2015/10/westlands-vs-united-states-settlement.pdf

USEPA 1997 — U.S. Environmental Protection Agency (USEPA). 1997. *Measuring Recycling – A Guide for State and Local Governments*. EPA530-R-97-011. September. https://archive.epa.gov/wastes/conserve/tools/recmeas/web/pdf/guide.pdf

Waste Mgmt. 2016 — Waste Management. 2016. *Waste Management Kettleman Hills B17 Landfill – 2016 Airspace Report*. June. http://www.calrecycle.ca.gov/SWFacilities/Directory/16-AA-0027/Document/306429

WRP 2017 — Water Resources Planning (WRP). 2017. *Water Supply Assessment – Westlands Solar Park*. July. Contained in Appendix F of this EIR.

WWD 2006 — Westlands Water District (WWD). 2006. *Generalized Depth of Shallow Groundwater Surface (Map)*. April. http://wwd.ca.gov/wp-content/uploads/2015/07/April-20061.pdf

WWD 2012 — Westlands Water District (WWD). 2012. *Rules and Regulations – Article 2. Regulations for Allocation and Use of Agricultural Water Within Westlands Water District*. As revised January 17, 2012. http://wwd.ca.gov/wp-content/uploads/2014/04/article.2.pdf

WWD 2013a — Westlands Water District (WWD). 2013. *Rules and Regulations – Article 19. Regulations Regarding the Application for and Use of Municipal and Industrial*

Water within Westlands Water District. As revised January 15, 2013. http://wwd.ca.gov/wp-content/uploads/2014/12/rules19.pdf Accessed September 9, 2016.

WWD 2013b — Westlands Water District (WWD). 2013. *Water Management Plan – 2012*. April. http://wwd.ca.gov/wp-content/uploads/2015/09/water-management-plan-2012.pdf

WWD 2015 — Westlands Water District (WWD). 2015. *Generalized Depth of Shallow Groundwater Surface (Map)*. April. http://wwd.ca.gov/wp-content/uploads/2015/08/gdsgs-april-2015.pdf

WWD 2016 — Westlands Water District (WWD). 2016. *Deep Groundwater Conditions Report – December 2015*. April. http://wwd.ca.gov/wp-content/uploads/2016/05/2015-deep-groundwater-conditions-report.pdf

WWD 2017 — Westlands Water District (WWD). 2017. *Annual Water Use and Supply*. WWD Website. June. http://wwd.ca.gov/water-management/water-supply/annual-water-use-and-supply/

This page intentionally left blank

4. EFFECTS FOUND NOT TO BE SIGNIFICANT

During the initial scoping process for this EIR, it was determined that several checklist items contained in Appendix G of the CEQA Guidelines either were not applicable to the project or were items under which the project would result in no impact or a less-than-significant impact. These items are listed below, along with a brief discussion supporting the impact determination in each case. [Note: The numbering of the impact categories below corresponds to the numbering system in CEQA Guidelines Appendix G.]

2. FORESTRY RESOURCES

Would the project:

(c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zone Timberland Production (as defined by Government Code section 51104(g))?

Westlands Solar Park

No Impact: The entire WSP plan area is zoned either "AG-40 General Agriculture-40" or "AX Exclusive Agriculture". There are no areas in Kings County that are zoned for forestland or timberland, according to the Kings County Zoning Plan (Kings County 1964). As such the WSP solar development would result in no conflicts with existing zoning for forest land or timberland.

WSP Gen-Tie Corridors

No Impact: The portions of the transmission corridors located in Kings County are on lands zoned either "AG-40 General Agriculture-40" or "AX Exclusive Agriculture" (Kings County 1964). The transmission segments crossing Fresno County are all zoned as either "AE 20 Exclusive Agricultural" or "AE 40 Exclusive Agricultural." There are no lands in eastern Fresno County that are zoned for timberland or forest land (Fresno County 2017c). As such the WSP gen-tie projects would result in no conflicts with existing zoning for forest land or timberland.

(d) Result in the loss of forest land or conversion of forest land to non-forest use?

Westlands Solar Park

No Impact: The WSP plan area consists predominantly of cultivated fields and does not include forest land. As such, the WSP solar development would not result in the loss of forest land or conversion of forest land to non-forest use.

WSP Gen-Tie Corridors

No Impact: All segments of the WSP gen-tie corridors pass through cultivated farmland or rangeland. There is no forest land in the vicinity of the gen-tie corridors. As such, the WSP gen-tie projects would not result in the loss of forest land 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 forest land to non-forest use?

Westlands Solar Park

No Impact: There is no forest land within the WSP plan area or in the vicinity. As such, the WSP solar development would not result in the conversion of forestland to non-forest use.

WSP Gen-Tie Corridors

No Impact: There is no forest land within the WSP gen-tie corridors or in the vicinity. As such, the WSP gen-tie projects would not result in the conversion of forestland to non-forest use.

13. POPULATION AND HOUSING

Would the project:

a) Induce substantial population growth in an area either directly (for example, by new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

Westlands Solar Park

Less-than-Significant Impact: The WSP solar facilities would not include residential components so they would not directly induce population growth in the area. The construction workforce would vary substantially throughout the WSP buildout period, with the peak workforce estimated to be about 470 workers. The construction workers are expected to be drawn from the existing labor pool in the region, and would not directly result in population growth. Operations staffing would also vary greatly from day to day, and workers would be stationed elsewhere travel to the site as needed to perform maintenance, repairs, panel cleaning, and other duties. It is estimated that, on average, about 80 workers would be working at WSP solar facilities on any given day at full buildout. It is expected that all operations staff will be drawn from the surrounding region, and that in cases where workers have relocated to the region from elsewhere, it is anticipated they would find ample housing choice from the existing inventory of homes in the region. Thus WSP solar development would not induce substantial population growth in the area.

WSP solar development would not result in the extension or roads or urban utilities (e.g., water and sewer) to lands not currently served by urban infrastructure, and thus would not induce urban development into the rural area of the County. Therefore, WSP solar development would not induce indirect growth through extension of urban infrastructure. [The potential for WSP solar development to result in growth inducement is addressed in detail in Section *6.1. Growth-Inducing Effects of the Proposed Project*.]

WSP Gen-Tie Corridors

Less-than-Significant Impact: The WSP gen-tie projects would not include residential components so they would not directly induce population growth in the area. During

construction, the gen-tie projects are expected to require a total workforce of about 100 construction workers over a period of less than one year for each gen-tie projects. It is expected that most of construction personnel would be drawn from the communities in the region, although some specialized workers may need to be brought in from outside the area and be temporarily lodged in local hotels. Upon completion, the operation of the gen-tie lines would have no permanent staff, and would receive intermittent inspections and maintenance activities by workers employed in the utility's larger operations. Thus WSP gen-tie projects would not induce substantial population growth in the area.

The WSP gen-tie projects would not result in the extension or roads or urban utilities (e.g., water and sewer) to lands not currently served by urban infrastructure, and thus would not induce urban development into the rural areas that the gen-tie lines would cross. Therefore, WSP gen-tie projects would not induce indirect growth through extension of urban infrastructure. [The potential for the WSP gen-tie projects to result in growth inducement is addressed in detail in Section *6.1. Growth-Inducing Effects of the Proposed Project*.]

b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

Westlands Solar Park

No Impact: There are no dwellings within the WSP plan area, and none of the residential properties in the vicinity of the plan area would be removed or encroached upon as a result of WSP solar development. Therefore, WSP solar development would not displace existing housing. [The potential for WSP solar development to result in land use compatibility impacts is addressed in Section *3.10. Land Use and Planning* (under Impact LU-3).]

WSP Gen-Tie Corridors

No Impact: There are no dwellings within the WSP gen-tie corridors, and none of the residential properties in the vicinity of the transmission projects would be removed or encroached upon as a result of the gen-tie projects. Therefore, the WSP gen-tie projects would not displace existing housing. [The potential for the WSP gen-tie projects to result in land use compatibility impacts is addressed in Section *3.10. Land Use and Planning* (under Impact LU-3).]

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

Westlands Solar Park

No Impact: There are no people currently living within the WSP plan area. Therefore, the WSP solar facilities would not displace any people.

WSP Gen-Tie Corridors

No Impact: There are no people currently living within the WSP gen-tie corridors. Therefore, the WSP gen-tie projects would not displace any people.

15. RECREATION

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

Westlands Solar Park

No Impact: The WSP solar facilities would not include residential components and thus would not result in substantially increased use of or demand for neighborhood or regional parks, or other recreational facilities.

WSP Gen-Tie Corridors

No Impact: The WSP gen-tie projects would not include residential components and thus would not result in substantially increased use of or demand for neighborhood or regional parks, or other recreational facilities.

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

Westlands Solar Park

No Impact: The WSP solar facilities would not include the construction or expansion of recreational facilities, nor would they require the construction or expansion of recreational facilities.

WSP Gen-Tie Corridors

No Impact: The WSP gen-tie projects would not include the construction or expansion of recreational facilities, nor would they require the construction or expansion of recreational facilities.

EFFECTS FOUND NOT TO BE SIGNIFICANT – REFERENCES/BIBLIOGRAPHY

Fresno County 2017a — County of Fresno. 2017. *Fresno County Code of Ordinances*. As amended through April 20, 2017. https://www.municode.com/library/ca/fresno_county/codes/code_of_ordinances

Fresno County 2017c — County of Fresno. 2017. *Fresno County GIS – Web Mapping – Zoning*. http://gis.co.fresno.ca.us/zoning/

Kings County 1964 — County of Kings. 1964. *Zoning Plan – County of Kings California*. Adopted April 7, 1964. http://www.kingscountygis.com/maps/

Kings County 2016b — Kings County. 2016. *Kings County Development Code. Kings County Code of Ordinances, Appendix A - Ordinance No. 668.12*. Dated January 26, 2016; Effective February 26, 2016. http://www.countyofkings.com/home/showdocument?id=12535

This page intentionally left blank

5. ALTERNATIVES TO THE PROPOSED PROJECT

5.1. INTRODUCTION

The CEQA Guidelines, at §15126.6(a), stipulate the following with respect to consideration and evaluation of project alternatives:

> "An EIR shall describe a range of reasonable alternatives to the project, or to the location of 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. An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation."

This section contains separate alternative analyses for the two main project components – the Westlands Solar Park, and the WSP Gen-Tie Corridors. The alternatives evaluation process for the main project components started with the identification of a reasonable range of alternatives which would likely achieve most of the project objectives for each respective project component. In addition, an evaluation of the No Project Alternative, as required under CEQA, was conducted for each of the two main project components. Additional alternatives, which were considered in the initial screening of alternatives but not carried forward for detailed analysis, are summarized along with the reasons they were not analyzed further.

5.2. ALTERNATIVES TO WESTLANDS SOLAR PARK

The purpose of the alternatives analysis under CEQA is to: "…focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project…" (CEQA Guidelines, Section 15126.6(b)). As discussed throughout Chapter 3 of this EIR, the potential impacts associated with WSP solar development can all be avoided or mitigated to less-than-significant levels through mitigation measures identified in this EIR. Since the Westlands Solar Park would result in no significant unavoidable impacts, it could be argued that analysis of alternatives which would avoid or lessen significant project impacts would be unnecessary and not required under CEQA. Nevertheless, the following alternatives are evaluated in order to provide a comparison of relative impact levels between the alternatives and the Westlands Solar Park.

1. No Project Alternative: This alternative assumes that the WSP plan area would not be developed for utility-scale solar, but instead would consist of continuation of the existing agricultural operations within the plan area, with current cropping patterns continuing into the future.

2. Reduced Project Size Alternative: This alternative assumes a 30 percent reduction in the size of the WSP plan area, resulting in solar PV development over approximately 14,600 acres with a total generating capacity of about 1,220 MW. The Reduced Project Size Alternative would comprise the

eastern and southern areas of the WSP plan area (i.e., Master Plan Subareas 1 through 8 on Figure PD-3). This would include Subareas 1 through 4 located generally north of Nevada Avenue and east of 25th Avenue, and Subareas 5 through 8 located south of Nevada Avenue. It is assumed that the Reduced Project Size Alternative would be phased over a period of 8 years, with an average installation rate of about 150 MW per year, and maximum buildout rate of 250 MW in any given year.

3. Alternative Project Location: The alternative project site consists of approximately 21,000 contiguous acres of WWD-owned retired farmland along both sides of SR-33, between City of Mendota on the north and Manning Avenue on the south (see Figure ALT-1).

5.2.1. PROJECT OBJECTIVES OF WESTLANDS SOLAR PARK

The following is a restatement of the project objectives for the WSP Master Plan as set forth in Section 2.2. of this EIR.

- Generate approximately 2,000 megawatts of clean, renewable electrical power utilizing solar photovoltaic (PV) technology and to deliver the electrical output to the State's electrical grid. (The estimated overall generating capacity for WSP could increase with improvements to solar PV module efficiency during the course of the buildout period for WSP.)

- Contribute to the solution of area-wide agricultural drainage problems by retiring all of the lands within the WSP plan area and providing productive reuse of those lands for renewable energy production as an alternative to irrigated agriculture.

- Provide for the economically viable and environmentally beneficial reuse of the WSP plan area's physically impaired agricultural soils.

- Contribute to the reduction in dependence on the aquifer for supplemental irrigation.

- Reduce cumulative salt loading to the groundwater resource.

- Constructively address the chronic shortage of surface water deliveries by removing the least productive farmland from irrigation by imported water, and by facilitating the redirection of scarce surface water allocations from the WSP plan area to more productive agricultural land within Westlands Water District that is not physically impaired by saline soils, high groundwater, or high selenium or other mineral concentrations.

- Provide utility-scale power generation on physically-impaired farmland in order to reduce pressure for renewable energy development on prime agricultural soils elsewhere.

- Provide for development of utility-scale solar generation facilities on highly disturbed lands which provide minimal habitat value for wildlife.

- Provide a low-impact alternative location for the siting of utility-scale renewable energy development that might otherwise occur on lands with high habitat value for protected wildlife species (such as the Mojave Desert).

- Provide utility-scale solar generation in a location that is already served by high-voltage transmission lines.

- Help implement the State's goal of increased electrical generation with renewable resources under California's Renewables Portfolio Standard (RPS).

- Help implement the California Renewable Energy Transmission Initiative (RETI) by providing for the development of up to 5,000 MW of the solar resource within the Westlands CREZ. (It is noted that the Westlands CREZ received the highest state-wide environmental ranking among all CREZs designated through the RETI process.)

- Contribute to overall reduction in greenhouse gas emissions by generating electricity that is not based on the combustion of fossil fuel, pursuant to The California Global Warming Solutions Act (AB 32), as extended and supplemented by SB 32 in 2016.

- Create new employment opportunities for local residents.

- Positively contribute to the local economy through stimulation of economic activity such as creation of secondary multiplier employment and the purchase of materials and services.

- Provide community benefits through increased property tax and sales tax revenues.

The project alternatives are described and evaluated below. This is followed by the identification of the environmentally superior alternative, as required under CEQA.

5.2.2. NO PROJECT ALTERNATIVE

The CEQA Guidelines require, in Section 15126.6(e)(1), that the "specific alternative of 'no project' shall…be evaluated along with its impact." Therefore, this chapter includes a description and evaluation of the environmental impacts associated with the No Project Alternative, relative to those resulting from the proposed project, including a discussion of the ability of the No Project Alternative to meet the project objectives. The CEQA Guidelines state: "[t]he 'no project' analysis shall discuss existing conditions…as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved…" (Section 15126.6(e)(2))(emphasis added). This section could be interpreted to require the discussion of two 'no project' alternatives: the 'no build' alternative and the 'reasonably foreseeable development' alternative, in cases where these are not the same scenario. In this case, the reasonably foreseeable development scenario consists of no solar development. It is reasonable to expect that, in the event the WSP project is not approved, the plan area would continue to be farmed and not developed for an alternative land use. Since there is no other 'reasonably foreseeable development' scenario in this case, this chapter considers the 'no build' scenario as the 'reasonably foreseeable development' scenario. Thus only one 'No Project' alternative is considered.

The No Project Alternative consists of not constructing the WSP solar facilities and continuing the farming operations on the WSP plan area without modifications to the site. The levels of impacts associated with the No Project Alternative are discussed below, relative to the levels of impacts associated with the proposed project.

Aesthetics. The planned WSP solar development would change the character of the WSP plan area from cultivated farmland to solar PV generating facilities. As discussed in Section *3.1. Aesthetics*, the overall visual impacts of WSP solar development would be less than significant. Under the No Project Alternative, there would be no visual change to the site, and thus the potential for visual change would be avoided and there would be no impact. Therefore, the No Project Alternative would result in a lower level of visual impacts than WSP solar development.

Agricultural Resources. The planned WSP solar development would occur on lands classified by the State as "Farmland," including a small amount of Prime Farmland, and substantial amounts of Farmland of Statewide Importance (see Section *3.2. Agricultural Resources*). However, due to adverse physical conditions which place severe constraints on agricultural productivity on these lands, and the fact that agricultural production would continue concurrently with the solar uses, and considering that the short-term solar uses would retain the agricultural soils in place, and that the sites would be restored to their pre-project condition upon decommissioning, the impact upon "Farmland" would be less than significant. As noted, the soils of the WSP plan area are impaired by high groundwater levels, poor drainage, and high salinity, which result diminished productivity due to poor yields and limitation of cropping choices to salt-tolerant crops. Under WSP solar development, approximately the on-site farmlands would be retired from irrigated agriculture, thus ending the salt loading and groundwater overdraft, providing for the reallocation of surface water deliveries from the retired lands of the plan area to non-impaired farmland to the west, which would thus obtain some relief from chronic surface water shortages and further reduce the need for groundwater pumping. Under the No Project alternative, ongoing farming would contribute to cumulative soil degradation and increased salinization of groundwater, along with continued overdraft of groundwater. In summary, the No Project Alternative would result in a greater level of impact to agricultural resources than WSP solar development.

Air Quality. During the construction phases, the planned WSP solar development would result in an incremental increase in air emissions due to on-site construction activity and from traffic generated by delivery trucks and commuting construction workers. However, the air quality impacts occurring during construction would be reduced due to the minor amount of grading required on the flat terrain, and would be mitigated to less-than-significant levels by mitigation measures implemented in conformance with Air District requirements. Once operational, the solar generating facilities would generate very low levels of air pollutants due to the low levels of operational and maintenance activities (see Section *3.3. Air Quality and Climate Change*). The overall air quality impacts of WSP solar development would be less than significant, increased air emissions would be avoided under the No Project Alternative. The No Project Alternative would result in no increases in air emissions, although particulate emissions would continue due to plowing and tilling of soil. While the overall air quality impacts of WSP solar development would be less than significant, the No Project Alternative would avoid increased air emissions relative to base conditions. However, under base conditions, the agricultural plowing and tilling of soil would result in on-going dust generation, while operation of the WSP solar facilities would generate almost no dust after construction is complete. Thus the No Project Alternative would result in a lower level of dust emissions than WSP solar development during construction, but would result in higher levels of dust emissions during operations. Therefore, the emissions of fugitive dust under the No Project Alternative would be generally similar to the overall dust emissions resulting from the WSP solar facilities. In addition, the No

Project alternative would involve continued exhaust emissions from farm machinery and equipment. The WSP solar facilities would involve elevated exhaust emissions during construction but very low levels of exhaust emissions during operation. Thus overall exhaust emissions under the No Project alternative would be similar to overall exhaust emissions with WSP solar development. In summary, the air quality impacts associated with the No Project alternative would be similar to those associated with WSP solar development.

Biological Resources. The planned WSP solar development would result in potential impacts to wildlife species such as burrowing owls, although these impacts would be reduced to less-than-significant levels by mitigation measures to be implemented in conjunction with each solar project (see Section *3.4. Biological Resources*). The No Project Alternative would avoid impacts to biological resources. Thus the No Project Alternative would result in a lower level of the biological impacts than WSP solar development.

Cultural and Paleontological Resources. There are no known historic, archaeological, or paleontological resources present within the WSP plan area, and any potential impacts to previously undiscovered resources would be mitigated by contingent measures to be implemented in the event any artifacts or fossils are encountered during grading and excavation for each solar project, thereby reducing any potential project impacts to less-than-significant levels (see Sections *3.5. Cultural Resources* and *3.11. Paleontological Resources*). Under the No Project Alternative, the potential for impacts to cultural resources would be avoided. Therefore, the No Project Alternative would result in lower levels of impacts to cultural resources than WSP solar development.

Geology and Soils. WSP solar development would be exposed to geologic and soils hazards, although any potential hazards would be mitigated to less-than-significant levels through mitigation measures to be implemented in conjunction with each solar project (see Section *3.6. Geology and Soils*). Under the No Project Alternative, potential geologic and soils impacts would be avoided. Therefore, the No Project Alternative would result in a lower level of geologic and soils impacts than WSP solar development.

Greenhouse Gas Emissions and Climate Change. Under the No Project Alternative, the current farming operations would continue, resulting in no change in greenhouse gas emissions from the plan area. While farming operations involve the combustion of fossil fuels in the operation of machinery and in the manufacture and transport of fertilizers and pesticides, some of these emissions are offset by the carbon sequestration provided by growing crops. Under the planned WSP solar development, the greenhouse gases emitted in the construction and operation of solar generating facilities would be more than offset by the substantial amount of avoided emissions from a fossil-fueled power plant with the same generating capacity (see Section *3.3. Air Quality and Climate Change*). Thus, although the No Project Alternative would result in no increase in greenhouse gas emissions, WSP solar development would result in a substantial avoidance of greenhouse gas emissions overall and thus would have a significant beneficial effect in terms of reducing the potential for global warming. Therefore, the No Project Alternative would result in a greater level of climate change impacts than the planned WSP solar development.

Hazards and Hazardous Materials. The WSP solar projects would involve the use of various fuels and materials during construction and operation which are classified as hazardous materials. However, the hazardous materials management plans and response plans that would be required for each solar facility would be carried out in case of accidental spill or unauthorized release of hazardous materials, resulting in a less-than-significant hazardous materials impact. For the WSP solar projects, the potential for residual contamination from previous agricultural and petroleum industry operations within the plan

area would be fully investigated and remediated as appropriate. Thus, under the planned WSP solar development, the potential for contamination from past and future sources of hazardous materials would be reduced to less-than-significant levels (see Section *3.7. Hazards and Hazardous Materials*).

Under the No Project Alternative there would be no increase in the potential for hazardous materials discharges and contamination. Although the past and current farming operations involved the storage and use of fuels, pesticides, herbicides, and fertilizers, and included exploratory and production drilling for petroleum, it is unlikely that residual contamination is present in hazardous concentrations. The potential for future site contamination under the No Project Alternative is also low given that agricultural operations would handle and utilize agricultural chemicals in a safe manner as directed in manufacturers' specifications. However, some risk of hazardous material contamination would remain under the No Project Alternative.

In summary, the potential for contamination by hazardous materials is low for both the planned WSP solar development and the No Project Alternative, with no clear difference between them in terms of impact level. Thus the No Project Alternative would result in a similar of potential hazardous materials impacts compared to WSP solar development.

Hydrology and Water Quality: WSP solar development would result in very small increases in site coverage by impervious surfaces, and would not result in off-site discharges of stormwater runoff. The potential for erosion and sedimentation during grading and construction would be minimized through standard erosion control measures, as required (see Section *3.8. Hydrology and Water Quality*). The No Project Alternative would result in no changes to site drainage and hydrology. Thus, while potential drainage and water quality impacts would be less than significant under WSP solar development, there would be no impact would under the No Project Alternative. Thus the No Project Alternative would result in a lower level of hydrology and water quality impacts than the planned WSP solar development.

Land Use and Planning: Under the planned WSP solar development, the potential for land use impacts such as incompatibility with nearby residential uses, agricultural activities, and NAS Lemoore flight operations would be less than significant (see Section *3.9. Land Use and Planning*). Under the No Project Alternative, there would be no change in land use, and no land use impacts. Thus the No Project Alternative would result in a lower level of land use impact than WSP solar development.

Noise: WSP solar development would result in increased noise from on-site grading and construction, as well as increased traffic noise along roadways used for truck deliveries and commute trips by construction workers, although the noise impacts from these construction-related activities would be less than significant. Once completed, the noise from solar facility operations would be negligible (see Section *3.10. Noise*). The No Project Alternative would result in no increase in ambient noise levels. Thus the No Project Alternative would result in a lower level of noise impacts than WSP solar development.

Public Services: The planned WSP solar projects would result in a small increase in demand for public services such as police and fire protection, and this impact would be less than significant (see *Section 3.12. Public Services*). The No Project Alternative would generate no increase in demand for fire and police services. Thus the No Project Alternative would result in a lower level of the public services impacts than the WSP solar projects.

Transportation/Traffic: During the construction phases, the planned WSP solar projects would result in generation of commute trips to their sites by construction workers, and truck trips for delivery of

equipment and materials. However, construction traffic would be temporary and the roadway network has adequate capacity to accommodate the short-term construction traffic volumes, although a traffic management plan would be required to manage large loads and slow moving vehicles. During project operations, the small operations and maintenance staffs would generate minimal traffic. The overall traffic impacts from WSP solar development would be less than significant with implementation of construction traffic management plans (see Section *3.13. Transportation/Traffic*). The No Project Alternative would result in no additional traffic generation and would have no traffic impacts. Thus, the No Project Alternative would result in a lower level of the traffic impacts than the WSP solar projects.

Utilities and Service Systems: The WSP solar facilities would require water supply, wastewater disposal, and solid waste disposal (see Section *3.14. Utilities and Service Systems*). The WSP impact on these utilities and service systems are summarized below, in comparison with the No Project Alternative.

Water Supply

The WSP solar projects would require water supply during both the construction and operational phases. During grading and construction, water would be needed for dust control, cleaning of equipment and vehicles, and domestic use. As discussed in Section *3.14. Utilities and Service Systems*, construction water requirements would be approximately 0.2 acre-feet per acre of construction. It is expected that existing on-site agricultural wells would provide non-potable water for non-domestic uses during construction, and that potable water for consumption by construction workers would be provided by bottled water brought to the site. Operational water demands would include water for periodic panel washing and general maintenance and cleaning. It is estimated that operational water requirements would average 0.135 acre-feet per acre per year. Operational water would be provided by WWD from imported surface water deliveries. No groundwater would be pumped to support PV solar operations.

Under the No Project Alternative, the ongoing farming operations include approximately 11,000 acres that would remain in irrigated agriculture and would continue to require substantial volumes of irrigation water. At an average irrigation rate of 2.5 acre-feet per acre, this would be 12.5 times greater than the average water demand from construction of WSP solar projects, and 18.5 times greater than the average water demand from solar facility operations. Assuming that Westland growers would continue to receive an annual average of about 51 percent of their CVP allocation, approximately 32 percent of the irrigation water would consist of imported water and the remaining irrigation needs would be provided by pumped groundwater. The continued pumping of groundwater at these annual volumes would exacerbate ongoing overdraft conditions, resulting on ongoing impacts to the aquifer.

In summary, the No Project Alternative would result in substantially greater water demands than the WSP solar projects, and would result in continued overdraft of the aquifer, while the WSP solar projects would not utilize any groundwater for project operations. Therefore, the No Project Alternative would result in substantially greater water supply impacts than the proposed WSP project.

Wastewater

The Wastewater disposal for the WSP solar projects would be provided by portable chemical toilets during both construction and operation, with off-site disposal by sanitary contractors. Thus, the WSP solar projects would result in less than significant impacts related to wastewater disposal. Under the No Project Alternative, there would be no demand for wastewater disposal, and no associated impacts.

Therefore, the No Project Alternative would result in lower level of wastewater disposal impact than the planned WSP solar development.

Solid Waste

With WSP solar development, solid waste would be generated during construction and operation of the solar generating facilities. However, there are no constraints to solid waste collection, and there is sufficient landfill capacity to accommodate non-recyclable waste from the solar facilities, so the impact would be less than significant. Under the No Project Alternative, there would be no increase in solid waste generation, and thus there would be no impact on solid waste disposal facilities. Therefore, the No Project Alternative would result in a lower level of solid waste disposal impact than the WSP solar projects.

In summary, the water supply impacts associated with the No Project Alternative would be substantially greater than under planned WSP solar projects, while the No Project Alternative would result in lower levels of wastewater disposal and solid waste disposal impacts than the WSP solar projects.

In summary, the No Project Alternative would result in lower levels of impact than WSP solar development in some categories, but would result in greater or similar levels of impact in others. The No Project Alternative would result in relatively lower levels of impact in the categories of aesthetics, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, noise, public services, traffic, wastewater disposal, solid waste disposal, although all of these impacts would be less than significant or fully mitigable with WSP solar development. The No Project Alternative would result in substantially greater levels of impact than WSP solar development in the categories of agricultural resources, greenhouse gas emissions, and water supply, and similar levels of impact to WSP solar development in terms of air quality, and hazards and hazardous materials. On balance, while the No Project Alternative would result in somewhat lower impacts in several categories, it would result in substantially greater impacts in others such as agricultural resources, greenhouse gas emissions/climate change, and water supply. In addition, since the planned WSP solar development results in no significant and unavoidable impacts, the No Project Alternative would not eliminate or substantially reduce such impacts. Therefore, the No Project Alternative would not represent an environmentally superior alternative to the planned WSP solar development. Moreover, the No Project Alternative would not fulfill any of the project objectives, as restated at the beginning of this chapter, particularly the objectives of helping to meet the state's renewable energy and greenhouse gas reduction targets, retiring all of the physically-impaired lands of the WSP plan area from irrigated agriculture, and maximizing reallocation of scarce imported water resources to more productive agricultural operations.

5.2.3. REDUCED PROJECT SIZE ALTERNATIVE

This alternative assumes a 30 percent reduction in the size of the WSP plan area, resulting in solar PV development over approximately 14,600 acres with a total generating capacity of about 1,220 MW. The Reduced Project Size Alternative would comprise the eastern and southern areas of the WSP plan area (i.e., Master Plan Subareas 1 through 8 on Figure PD-3). This would include Subareas 1 through 4 located generally north of Nevada Avenue and east of 25th Avenue, and Subareas 5 through 8 located south of Nevada Avenue. It is assumed that the Reduced Project Size Alternative would be phased over a period of 8 years, with an average installation rate of about 150 MW per year, and maximum buildout rate of 250 MW in any given year. The remaining 6,338 acres that would not be developed for solar PV facilities would remain in agricultural cultivation.

Aesthetics: The proposed WSP project would change the character of the WSP site from cultivated farmland to solar PV generating facilities. While the changes would be noticeable from existing residences nearby and from public vantage points along roadways passing through the plan area, the overall visual impacts associated with WSP solar development would be less than significant (see *Section 3.1. Aesthetics*). Under the Reduced Project Size Alternative, the visual change to the western one-third of the plan area would be avoided. As viewed from the Shannon Ranch and Stone Land Company Ranch, which are adjacent to the western part of the plan area, the nearest solar development would be approximately 1.5 miles to the east. Along Avenal Cutoff Road, most of the solar development planned along the roadway would not occur under the Reduced Project Size Alternative, so the overall visibility of the solar development from public vantage points would be reduced. Therefore, while the visual impacts under the planned WSP solar development would be less than significant, the level of visual impact associated with the Reduced Project Size Alternative would be lower than the visual impact associated with the planned WSP solar development.

Agricultural Resources: The planned WSP solar development would occur on lands classified by the State as "Farmland," including a small amount of Prime Farmland, and substantial amounts of Farmland of Statewide Importance (see Section *3.2. Agricultural Resources*). However, due to adverse physical conditions which place severe constraints on agricultural productivity on these lands, and the fact that agricultural production would continue concurrently with the solar uses within the solar facility sites, and considering that the solar uses would retain the agricultural soils in place, and that the sites would be restored to their pre-project condition upon decommissioning, the impact upon "Farmland" would be less than significant. As noted, the soils of the WSP plan area are impaired by high groundwater levels, poor drainage, and high salinity, which result diminished productivity due to poor yields and limitation of cropping choices to salt-tolerant crops. Under WSP solar development, approximately 11,119 acres would be retired from irrigated agriculture (note: 9,819 acres are already retired), thus ending the salt loading and groundwater overdraft within the plan area, providing for the reallocation of surface water deliveries from the retired lands of the plan area to non-impaired farmland to the west, which would thus obtain some relief from chronic surface water shortages and further reduce the need for groundwater pumping. Under the Reduced Project Size Alternative, approximately 4,781 acres would be newly retired, while farming would continue on the western 6,338 acres. This continued farming would contribute to cumulative soil degradation and increased salinization of groundwater, along with continued overpumping of groundwater. In summary, the Reduced Project Size Alternative would prolong and exacerbate the degradation of soils and groundwater on about 6,338 acres of physically-impaired land, while the proposed WSP project would retire this farmland, thus ending the cumulative resource impacts while putting scarce imported water supplies to better use on productive farmland, and enhancing its long-term viability. Therefore, the level of impacts to agricultural resources under the Reduced Project Size Alternative would be greater than under the planned WSP solar development.

Air Quality: During the construction phases, the planned WSP solar development would result in an incremental increase in air emissions due to on-site construction activity and from traffic generated by delivery trucks and commuting construction workers. However, the air quality impacts occurring during construction would be mitigated to less-than-significant levels by mitigation measures implemented in conformance with Air District requirements. Once operational, the solar generating facilities would generate very low levels of air pollutants due to the low levels of operational and maintenance activities (see Section *3.3. Air Quality and Climate Change*). Under the Reduced Project Size Alternative, the overall lower levels of activity during construction and operation within the solar development area would result in lower overall air emissions compared to the proposed WSP project. However, continued agricultural

activity on the undeveloped 6,338 acres would generate dust emissions during agricultural operations such as plowing and tilling, and under high wind conditions when soil is exposed. These emissions would continue indefinitely, and would likely more than balance the construction emissions from solar development in the long run. Thus, the overall level of air quality impacts resulting from the Reduced Project Size Alternative would be similar to the air quality impacts associated with WSP solar development.

Biological Resources: The planned WSP solar development would result in potential impacts to wildlife species such as burrowing owls and their habitat, although these impacts would be reduced to less-than-significant levels by mitigation measures to be implemented in conjunction with each solar project (see Section *3.4. Biological Resources*). Under the Reduced Project Size Alternative, fewer acres of foraging habitat would be developed for solar facilities. Thus, while the planned WSP solar development would not result in significant reductions in habitat, the Reduced Project Size Alternative would result in a relatively lower impact in terms of habitat reduction. Therefore, the Reduced Project Size Alternative would result in a lower level of impact to biological resources than the planned WSP solar development.

Cultural and Paleontological Resources: There are no known historic, archaeological, or paleontological resources present within the WSP plan area, and any impacts to previously undiscovered resources would be mitigated by contingent measures to be implemented in the event any artifacts or fossils are encountered during grading and excavation for the solar projects, thereby reducing any potential project impacts to less-than-significant levels (see Sections *3.5. Cultural Resources* and *3.11. Paleontological Resources*). Under the Reduced Project Size Alternative, the potential impacts to cultural resources would be avoided on about one-third of the site. Therefore, the level of cultural and paleontological resource impacts associated with the Reduced Project Size Alternative would be lower than the cultural resources impacts associated with the planned WSP solar development.

Geology and Soils: WSP solar development would be exposed to geologic and soils hazards, although any potential hazards would be mitigated to less-than-significant levels through mitigation measures to be implemented in conjunction with each solar project (see Section *3.6. Geology and Soils*). Under the Reduced Project Size Alternative, potential geologic and soils would be avoided on about one-third of the WSP plan area would remain undeveloped. Therefore, the overall level of geologic and soils impacts resulting from the Reduced Project Size Alternative would be lower than the geologic and soils impacts associated with the planned WSP solar development.

Greenhouse Gas Emissions and Climate Change. Under the planned WSP solar development, the greenhouse gases emitted in the construction and operation of solar generating facilities would be more than offset by the substantial amount of avoided emissions from a fossil-fueled power plant with the same generating capacity (see Section *3.3. Air Quality and Climate Change*). Under the Reduced Project Size Alternative, the current farming operation would continue over one-third of the plan area, resulting in no change in greenhouse gas emissions from that area. The overall greenhouse gas reduction achieved by the Reduced Project Size Alternative would be substantially less than the greenhouse gas reduction from the planned WSP solar projects. Therefore, the climate change impacts associated with the Reduced Project Size Alternative would be greater than the climate change impacts associated with the planned WSP solar development.

Hazardous Materials: The WSP solar projects would involve the use of various fuels and materials during construction and operation which are classified as hazardous materials. However, the hazardous materials management plans and response plans that would be required for each solar facility would be carried out in case of accidental spill or unauthorized release of hazardous materials, resulting in a less-

than-significant hazardous materials impact. For the WSP solar projects, the potential for residual contamination from previous agricultural and petroleum industry operations within the plan area would be fully investigated and remediated as appropriate. Thus, under the planned WSP solar development, the potential for contamination from past and future sources of hazardous materials would be reduced to less-than-significant levels (see Section *3.7. Hazards and Hazardous Materials*).

Under the Reduced Project Size Alternative, there would be a reduced potential for hazardous materials discharges and contamination relative to the planned WSP solar development. The potential for future site contamination within the agricultural areas of the Reduced Project Size Alternative is low given that agricultural operations would handle and utilize agricultural chemicals in a safe manner as directed in manufacturers' specifications. However, some risk of hazardous material contamination would remain within the agricultural areas of the Reduced Project Size Alternative.

In summary, the potential for contamination by hazardous materials is low for both the planned WSP solar development and the Reduced Project Size Alternative, with no clear difference between them in terms of impact level. Thus the Reduced Project Size Alternative would result in a similar of potential hazardous materials impacts compared to planned WSP solar development.

Hydrology and Water Quality: WSP solar development would result in very small increases in site coverage by impervious surfaces, and would not result in off-site discharges of stormwater runoff. The potential for erosion and sedimentation during grading and construction would be minimized through standard erosion control measures, as required (see Section *3.8. Hydrology and Water Quality*). The Reduced Project Size Alternative would result in no changes to site drainage and hydrology over about one-third of the plan area. Thus, while potential drainage and water quality impacts would be mitigated to less-than-significant levels under the planned WSP solar development, they would be avoided on about one-third of the plan area under the Reduced Project Size Alternative. Therefore, the level of hydrology and water quality impacts associated with the Reduced Project Size Alternative would be lower than the hydrology and water quality impacts associated with planned WSP solar development.

Land Use and Planning: Under the planned WSP solar development, the potential for land use impacts such as incompatibility with nearby residential uses, agricultural activities, and NAS Lemoore flight operations would be less than significant (see Section *3.9. Land Use and Planning*). The Reduced Project Size Alternative would result in a smaller development footprint, and the western areas of WSP adjacent to the existing Shannon Ranch and Stone Land Company Ranch would not be developed. This alternative would involve a lower overall level of construction and operational activity than the planned WSP, particularly in the vicinity of existing residents, of which the nearest would be 0.5 miles from nearest solar projects. In terms of land use compatibility with nearby residential uses, the lower levels of noise and visual effects to existing dwellings associated with the Reduce Project Size Alternative would indicate reduced potential for land use incompatibility. In terms of compatibility with adjacent agricultural operations, the Reduced Project Size Alternative would have a smaller boundary with adjacent farmlands, and thus would have a lower potential for conflicts between solar and farming operations. In terms of compatibility with NAS Lemoore flight operations, the Reduced Project Size Alternative would have a smaller area within the flight path of aircraft operations and thus would have a lower potential for conflict with those operations. Although the planned WSP solar development would not result in significant land use impacts, the level of land use impact under the Reduced Project Size Alternative would be lower than those associated with the planned WSP solar development.

WSP solar development would result in increased noise from on-site grading and construction, as well as increased traffic noise along roadways used for truck deliveries and commute trips by construction workers, although the noise impacts from these construction-related activities would be less than significant. Once completed, the noise from solar facility operations would be negligible (see Section *3.10. Noise*). The No Project Alternative would result in no increase in ambient noise levels. Thus, the No Project Alternative would result in a lower level of noise impacts than WSP solar development.

Noise: During construction, the planned WSP solar development would result in increased noise from on-site grading and construction, as well as increased traffic noise along roadways used for truck deliveries and commute trips by construction workers. The noise levels generated during construction would be less than significant at any off-site residential receptor location. Once completed, the noise from solar facility operations would be negligible (see Section *3.10. Noise*). The Reduced Project Size Alternative would result in a smaller development footprint, and the western areas of WSP adjacent to the existing Shannon Ranch and Stone Land Company Ranch would not be developed. This alternative would involve a lower overall level of construction and operational activity than the planned WSP, particularly in the vicinity of existing residents, of which the nearest would be 0.5 miles from nearest solar projects. Thus, although the noise impacts resulting from the planned WSP solar development would be less than significant, the Reduced Project Size Alternative would result in less noise at sensitive receptor locations. Therefore, the level of noise impacts associated with the Reduced Project Size Alternative would lower than the noise impacts associated with the planned WSP solar development.

Public Services: The planned WSP solar projects would result in a small increase in demand for public services such as police and fire protection, and this impact would be less than significant (see *Section 3.12. Public Services*). The Reduced Project Size Alternative would generate lower demand for these services due to the smaller overall size of the solar operations. Thus, the level of impacts to public services under the Reduced Project Size Alternative would be lower than the public service impacts associated with WSP solar projects.

Transportation/Traffic: During the construction phases, the planned WSP solar projects would result in generation of commute trips to their sites by construction workers, and truck trips for delivery of equipment and materials. However, construction traffic would be temporary and the roadway network has adequate capacity to accommodate the short-term construction traffic volumes, although a traffic management plan would be required to manage large loads and slow moving vehicles. During project operations, the small operations and maintenance staffs would generate minimal traffic. The overall traffic impacts from WSP solar development would be less than significant with implementation of construction traffic management plans (see Section *3.13. Transportation/Traffic*). The Reduced Project Size Alternative would result in about the same volume of construction traffic at any given time, since it is likely that the pace of construction would be similar to that expected for the planned WSP solar projects. Thus the same mitigation in the form of construction traffic management would apply to the Reduced Project Size Alternative. However, the overall duration of construction would be shorter, so the length of time that construction traffic would be on vicinity roadways would be less. Thus, although the construction traffic volumes generated by planned WSP solar development would be less than significant, overall traffic generation would be less under the Reduced Project Size Alternative due to the shorter buildout period. Therefore, the level of traffic impact resulting from the Reduced Project Size Alternative would be lower than the construction traffic impacts associated with the planned WSP solar development.

During solar facility operations under the planned WSP solar development, the small operations and maintenance staffs would generate minimal traffic. Due to the smaller overall size of the Reduced Project

Size Alternative, the overall operational traffic generation upon WSP buildout would be relatively lower. Therefore, the level of operational traffic impacts associated with the Reduced Project Size Alternative would be lower than the operational traffic impacts associated with the planned WSP solar development.

Utilities and Service Systems: The WSP solar facilities would require water supply, wastewater disposal, and solid waste disposal (see Section *3.14. Utilities and Service Systems*). The WSP impact on these utilities and service systems are summarized below, in comparison with the No Project Alternative.

Water Supply

The WSP solar projects would require water supply during both the construction and operational phases. During grading and construction, water would be needed for dust control, cleaning of equipment and vehicles, and domestic use. As discussed in Section *3.14. Utilities and Service Systems*, construction water requirements would be approximately 0.2 acre-feet per acre of construction. It is expected that existing on-site agricultural wells would provide non-potable water for non-domestic uses during construction, and that potable water for consumption by construction workers would be provided by bottled water brought to the site. Operational water demands would include water for periodic panel washing and general maintenance and cleaning. It is estimated that operational water requirements would average 0.135 acre-feet per acre per year. Operational water would be provided by WWD from imported surface water deliveries. No groundwater would be pumped to support PV solar operations.

Under the Reduced Project Size Alternative, the undeveloped 4,781 acres would remain in irrigated agriculture and would continue to require substantial volumes of irrigation water. At an average irrigation rate of 2.5 acre-feet per acre, this would be 12.5 times greater than the average water demand from construction of WSP solar projects, and 18.5 times greater than the average water demand from solar facility operations. Assuming that Westland growers would continue to receive an annual average of about 51 percent of their CVP allocation, approximately 32 percent of the irrigation water would consist of imported water and the remaining irrigation needs would be provided by pumped groundwater. The continued pumping of groundwater at these annual volumes would exacerbate ongoing overdraft conditions, resulting on ongoing impacts to the aquifer.

In summary, the Reduce Project Size Alternative would result in substantially greater water demands than the planned WSP solar projects, and would result in continued overdraft of the aquifer, while the planned WSP solar projects would not utilize any groundwater for project operations. Therefore, the Reduced Project Size Alternative would result in substantially greater water supply impacts than the proposed WSP project.

Wastewater

The Wastewater disposal for the planned WSP solar projects would be provided by portable chemical toilets during both construction and operation, with off-site disposal by sanitary contractors. Thus, the WSP solar projects would result in less than significant impacts related to wastewater disposal. Under the Reduced Project Size Alternative, there would be lower demand for wastewater disposal. Therefore, the Reduced Project Size Alternative would result in lower level of wastewater disposal impact than the planned WSP solar development.

Solid Waste

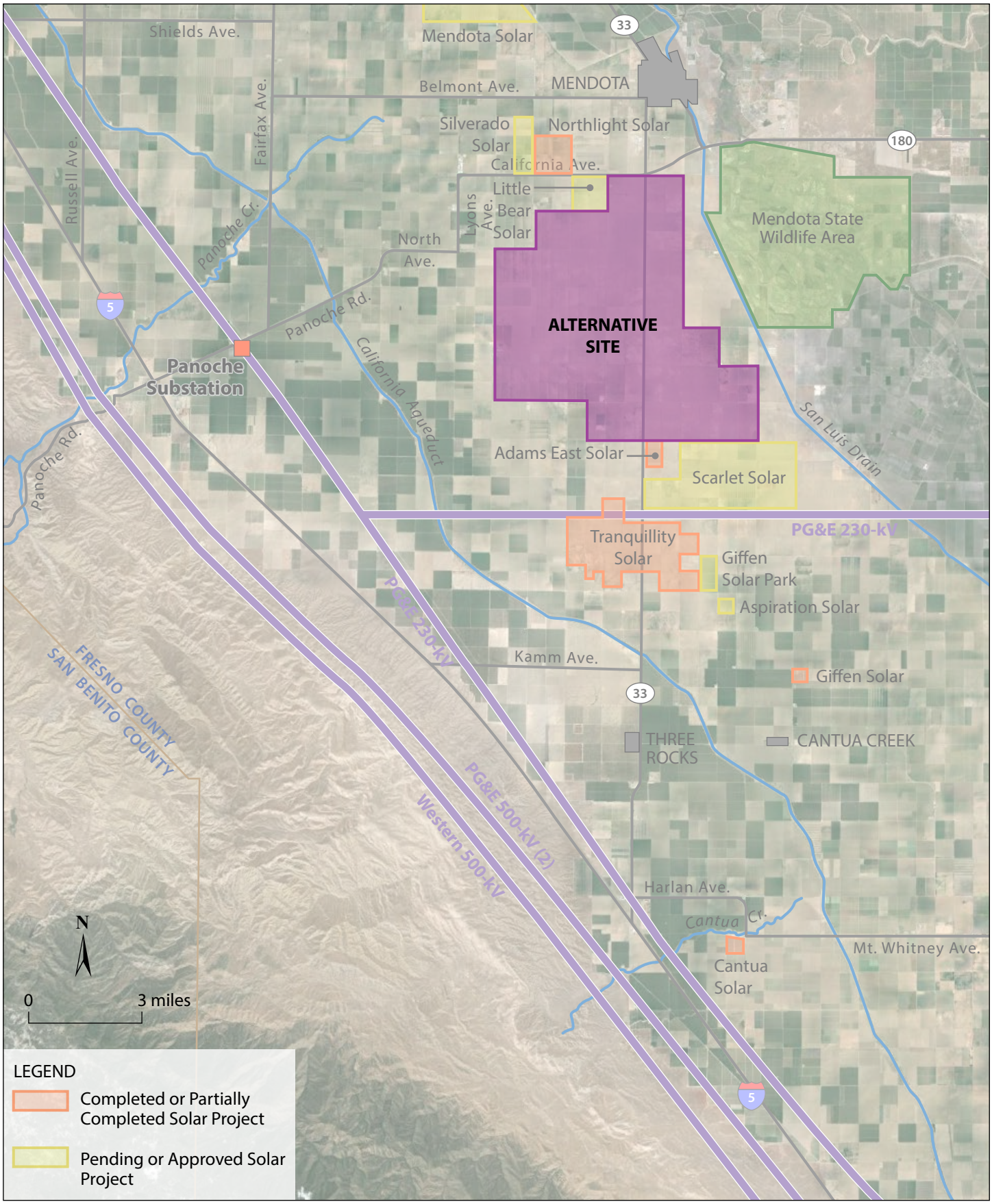
With WSP solar development, solid waste would be generated during construction and operation of the solar generating facilities. However, there are no constraints to solid waste collection, and there is sufficient landfill capacity to accommodate non-recyclable waste from the solar facilities, so the impact would be less than significant. Under the Reduced Project Size Alternative, the increase in solid waste generation would be less, and thus there would have less impact on solid waste disposal facilities. Therefore, the Reduced Project Size Alternative would result in a lower level of solid waste disposal impact than the planned WSP solar development.

In summary, the Reduced Project Size Alternative would result in lower levels of impact than the planned WSP solar development in some categories, but would result in greater or similar levels of impact in others. The Reduced Project Size Alternative would result in relatively lower levels of impact in the categories of aesthetics, biological resources, cultural and paleontological resources, geology and soils, hydrology and water quality, land use and planning, noise, public services, traffic, wastewater disposal, and solid waste disposal, although all of these impacts would be less than significant or fully mitigable under the planned WSP solar development. The Reduced Project Size Alternative would result in greater levels of impact than the planned WSP solar development in the categories of agricultural resources, hazardous materials, greenhouse gas emissions, and water supply, and similar levels of impact to WSP solar development in terms of air quality, and hazards and hazardous materials. On balance, while the Reduced Project Size Alternative would result in somewhat lower impacts in several categories, it would result in substantially greater impacts in others such as agricultural resources, greenhouse gas emissions, and water supply. In addition, since the planned WSP solar development results in no significant and unavoidable impacts, the Reduced Project Size Alternative would not eliminate or substantially reduce such impacts. Therefore, the Reduced Project Size Alternative would not represent an environmentally superior alternative to the planned WSP solar development. Moreover, the Reduced Project Size Alternative would be significantly less effective in fulfilling the project objectives, as restated at the beginning of this chapter, particularly the objectives of helping to meet the state's renewable energy and greenhouse gas reduction targets, retiring all of the physically-impaired lands of the WSP plan area from irrigated agriculture, and maximizing reallocation of scarce imported water resources to more productive agricultural operations.

5.2.4. ALTERNATIVE PROJECT LOCATION

The selection of a suitable location for the alternative site analysis involved the application of site selection criteria which would identify a site that approximates the salient characteristics of the WSP plan area. These criteria included the following: a minimum size requirement of 21,000 contiguous acres; location on or near an existing transmission line; site comprises physically-impaired farmland; low value for protected species and habitats; low impact to residential and non-residential structures; no lands with pending or approved development applications; and direct access to a State highway or improved County road.

The only potential alternative site in the region which satisfies all of these criteria was identified at a location 30 miles northwest of the WSP plan area in Fresno County. This site consists of approximately 21,000 contiguous acres of WWD-owned retired farmland situated south of the City of Mendota along both sides of SR-33, between California Avenue on the north and Manning Avenue on the south (see Figure ALT-1). The Alternative Project Site (hereinafter also referred to as the "Mendota Site") is located just north of a 230-kV transmission line which runs in an east-west direction through the area.



Base map: Google Earth, 2016

Westlands Solar Park - Alternative Site

Figure ALT-1

This page intentionally left blank

All of the lands within the Mendota Site are designated as "drainage-impaired" by the U.S. Bureau of Reclamation and the Westlands Water District, and none of the lands within the Mendota Site are classified as Prime Farmland by the Department of Conservation (USBR 2006, Fig. ES-2; DOC 2008). The Mendota Site consists entirely of farmland that is no longer irrigated and is currently used for pasture, or for cultivation of winter wheat, or is fallow. There are several ranch complexes within and near the Mendota Site including the following: 1) within the site – 3 small ranch complexes with a total of 4 dwellings; adjacent to the site – 5 ranch complexes with a total of 24 dwellings; and within ¼ mile of the site – 1 additional ranch complex with 9 dwellings.

The impacts associated with solar PV development of the Mendota Site are discussed below and compared to the impacts of planned WSP solar development in Kings County.

Aesthetics: Both the Mendota site and proposed WSP site are flat, featureless, and absent of scenic resources. The mountains and foothills of the Coast Ranges are visible on the horizon in distant views to the west from both sites (see Section *3.1. Aesthetics*). There are no rock outcroppings or historic buildings or important trees on either site or adjacent lands. There are no designated State scenic highways in the vicinity of either site and no highways in the area been determined to be eligible for such designation at the County or State level. There relatively few residences in proximity to either site (i.e., the Mendota site has 4 dwellings within the site and 24 dwellings adjacent; the WSP site has 22 dwellings adjacent and none within the site). Both sites are traversed by lightly traveled highways (i.e., the Mendota Site is traversed by State Route 33, and the WSP site is traversed by Avenal Cutoff Road.

Given the low visual quality of both sites, and the low number of visual receptors, the visual sensitivity of both sites is low. Given low profile of solar PV development, the overall visual impacts associated with the solar development of either site would be less than significant. For both the Mendota site and the proposed WSP site, any nearby residences with direct views into the site would have landscaped buffer areas within the adjacent portions of the project site that would provide visual screening from solar arrays that may be located nearby. The Mendota site includes 3 ranch complexes with a total of 4 dwellings that would be surrounded by solar development, albeit screened and buffered by existing landscaping or intervening ranch operations buildings in all cases. At the WSP site, the nearest ranch complexes would be screened existing landscaping and separated from the nearest solar facilities by improved County roads that would provide additional separation. Thus while the general visual impacts associated with the solar development of the Mendota and WSP sites would be similar and less than significant, the WSP site provides greater separation between solar facilities and adjacent residences. Therefore, the level of aesthetic impact associated with the Mendota Site would be greater than the aesthetic impact from the WSP site.

Agricultural Resources: The soils of the Mendota site consist entirely of soils of the Tranquillity-Ciervo, saline-sodic-Calflax association. As with the soils of the WSP site, these soils have a land capability rating of Class 3 or lower when irrigated, and are rated Class 7 without irrigation (NRCS 2006). Similar to the WSP site, all of the lands within the Mendota site have been designated as "drainage-impaired" by the U.S. Bureau of Reclamation and Westlands Water District, which is a reflection of their high groundwater levels and high salinity, which place severe constraints on agricultural productivity (USBR 2006, Fig. ES-2). The reuse of the degraded farmlands of the Mendota site for solar generating facilities would not result in significant impacts to agricultural resources, as is the case for the planned WSP site (see Section *3.2. Agricultural Resources*). As such, the level of impacts to agricultural resources resulting from the solar

development of the Mendota site would be similar to the level of agricultural impacts associated with solar development of the WSP plan area.

Air Quality: The solar development of either the Mendota or WSP site would result in air emissions associated with construction and operation. During their construction phases, the generating facilities would result in short-term emissions of particulate matter and equipment exhaust, as well as vehicle exhaust from delivery trucks and worker commute trips. Given that the Mendota site and the WSP site are located at similar distances from regional population centers where construction workers would mainly reside and commute from, and given that the sites are also similarly distant from northern and southern California ports and manufacturing centers where solar generating components would be transported from, there would be no substantial difference between the sites in terms of overall vehicle miles traveled and resulting emissions levels during construction.

During the construction phases for either project site, grading and construction activities would generate potential particulate emissions from windborne dust. It is expected that the resulting levels of particulate matter and ozone precursors (from equipment exhaust) would exceed air quality standards, although it is anticipated that the construction dust and exhaust emissions would be reduced sufficiently to meet applicable significance thresholds through dust suppression measures and other mitigation measures specified by the San Joaquin Valley Air Pollution Control District.

During project operations, emissions would result in long-term emissions from project delivery and commute traffic, and from on-site maintenance activities. However, the level of activity during project operations would be too low to result significant air quality impacts at either the planned WSP site or the Mendota site.

In summary, the air emissions from solar development of the Mendota site would be similar to those associated with the planned WSP site, given that they would cover the same land area and generate similar traffic volumes. The air quality impacts associated with the solar development would be mitigated to less-than-significant levels at either site. Therefore, the level of air quality impacts resulting from solar development of the Mendota site would be very similar to air quality impacts associated with the planned WSP site.

Biological Resources: The Mendota site largely consists of row crops (winter wheat) and fallow fields which provide foraging habitat for small mammals and raptors. As with the planned WSP site, there are no wetlands, riparian habitats, or significant trees on the Mendota site. There are known occurrences of a number of protected plant and animal species within and near the Mendota site. Special-status plant species that have been recorded within the Mendota site include Munz's tidy tips and San Joaquin woollythreads. Special-status animal species that have been recorded within 3 miles of the Mendota site include: San Joaquin kit fox, Nelson's antelope squirrel, Swainson's hawk, burrowing owl, mountain plover, blunt-nosed leopard lizard, giant garter snake, western mastiff bat, and other species (Caltrans 2015; Fresno County 2015). The fields of the Mendota site would provide foraging habitat for the Swainson's hawk and other raptors. The numerous San Joaquin kit fox sightings to the west and the along the San Joaquin River to the northeast indicate that kit fox utilize the Mendota site as a migration route.

A distinguishing feature of the Mendota site is its proximity to several regional wildlife areas and ecological preserves. These include the Mendota Wildlife Management Area, Alkali Sink Ecological Preserve, and Kerman Ecological Preserve, which are located off-site to the east, and the Panoche Hills Ecological Preserve and the Little Panoche Reservoir Wildlife Area, which are located across I-5 to the west. The

Panoche Hills provide habitat for a number of protected species such as blunt-nosed leopard lizard, San Joaquin kit fox, several species of kangaroo rat and other small mammals, as well as protected birds, insects, and plants. The Mendota Wildlife Management Area and nearby preserves also provide habitat for several protected species (Caltrans 2015). Accordingly, the *Recovery Plan for the Upland Species of the San Joaquin Valley* designates the lands of the Mendota site as part of a larger "area where connectivity and linkages should be promoted" (USFWS 1998, Fig. 72). The planned WSP site is not identified in the Recovery Plan as having regional biological importance as either habitat or migration corridor. Thus, while both the Mendota site and the WSP site have relatively low biological value as wildlife habitat themselves, the Mendota site has a greater number of protected species sightings in the immediately surrounding area, and it has been identified as part of an important wildlife movement corridor. Therefore, the overall biological sensitivity of the Mendota site is greater than that of the WSP site, and potential for impacts to protected species is greater at the Mendota site than at that WSP site. Therefore, the level of biological impacts that would result from solar development of the Mendota site would be greater than the impacts associated with solar development at the WSP site.

Cultural and Paleontological Resources: There are no known historic, archaeological, or paleontological resources present on Mendota or WSP sites, although it is possible that previously undiscovered buried resources could be encountered during site grading and development at either site. Although no fossils have been identified at either the Mendota or WSP site, both sites are underlain by Pleistocene era deposits which could include paleontological resources; however, in both cases any fossiliferous material is likely occur below the shallow depths of excavation associated with solar PV development. Potential impacts to any buried cultural or paleontological materials that may be encountered during grading and excavation would be fully mitigated through standard contingent mitigations at either site. Since the cultural resources impacts would be less than significant or would be similarly mitigated at either alternative site, the level of impact to cultural and paleontological resources from solar development of the Mendota site would be similar to the impacts associated with development of the WSP site.

Geology and Soils: The Mendota site and the WSP site are subject to very similar soil conditions and levels of seismic hazard. Both sites are located well outside an Alquist-Priolo Earthquake Fault Zone, so the possibility of ground surface rupture at either site is remote. Both sites would be subject to ground shaking from an earthquake centered on the Great Valley Fault Zone or the San Andreas Fault Zone, both of which are located in the Coast Ranges to the west The potential for these and other seismic hazards, such as liquefaction or seismically-induced settlement, to significantly affect solar development within either the Mendota or WSP site would be subject to detailed geotechnical investigations The site soils would also be evaluated for potential impacts to structures and foundations, such as expansion potential and subsidence. These studies would evaluate the geologic and soils hazards and would identify appropriate mitigation measures to minimize risks associated with any such hazards on either site. Given the similarity of soil and seismic conditions, and given that the potential impacts would be mitigated to less-than-significant levels at either location, the level of geologic impacts resulting from solar development of the Mendota site would be similar to the impacts associated with development of the WSP site.

Hazards and Hazardous Materials: At both the Mendota and WSP site, the past and current agricultural operations involved the storage and use of fuels, pesticides, herbicides, and fertilizers, and included exploratory and production drilling for petroleum. While there is a potential for residual contamination from these activities at both sites, the potential for associated hazard would be fully investigated and remediated, as appropriate, in accordance with federal, state, and local regulations.

The construction and operation of solar facilities at either site would involve the use of various fuels and materials which are classified as hazardous materials. For example, transformers would contain mineral oil which would require secondary containment. For both sites, hazardous materials management plans and response plans would be prepared and implemented in case of accidental spill or unauthorized release of hazardous materials.

In summary, any potential hazardous materials impacts associated with past activities or ongoing operation of solar facilities would be mitigated to less-than-significant levels at either the Mendota or the WSP site. Thus, the level of hazardous materials impacts that would potentially result from solar development of the Mendota site would be similar to the impacts associated with development of the WSP site.

Hydrology and Water Quality: There are no FEMA-designated floodplains or floodways on or immediately adjacent to either the Mendota site or the WSP site (Fresno County 2000a, Fig. 9-7). As such, there would be little or no potential for solar facilities to be subject to flooding impacts or to impede flood flows at either the Mendota or WSP site. In general, solar PV development would be very similar at either the Mendota or WSP site and would result in very small increases in the volume and rate of stormwater flow. The existing site terrain would undergo very little modification, and the solar development would add a very small percentage of impervious surfaces to the site. Although the sites would be largely covered by solar arrays mounted on steel posts, rainfall would drain off the tilted panels to the permeable ground below. New impervious surfaces would be confined to foundations and pavements added by transformer/inverter enclosures, operations and maintenance facilities, substations, and maintenance driveways. The total increase in impervious surface coverage would be minimal and would result in little or no change to off-site runoff or contribution to downstream flood flows. Site grading at either site would be designed for positive drainage and avoidance of hydrologic impacts.

The potential for surface water quality impacts would be similar for the Mendota and WSP sites. Both sites are relatively level and have similar soil and rainfall characteristics. During grading and construction for solar facilities, stormwater runoff would have the potential to erode exposed soils and result in sedimentation of water bodies. Due to the relatively level terrain and absence of natural drainage courses on both the Mendota and WSP sites, the potential for surface water pollution could be readily mitigated at either site through standard erosion and sediment controls during the construction phases, and through best management practices during the operational phases of solar development.

Since the drainage, flooding, and water quality impacts would be less than significant or would be similarly mitigated at both sites, the level of hydrology and water quality impacts resulting from solar development of the Mendota site would be similar to the impacts associated with development of the WSP site.

Greenhouse Gas Emissions. Solar generating facilities involve the combustion of fossil fuels through operation of construction equipment and vehicles, generation of employee and delivery traffic, and on-site operations and maintenance activities. Fossil fuel combustion results in emissions of greenhouse gases such as carbon dioxide. Given that the solar facilities at either site would be very similar in nature and scale, and considering the locational and site characteristics are very similar for both sites, it is expected that the vehicle miles traveled and construction fuel consumption would be very similar for both sites, resulting very similar levels of greenhouse gas emissions. Moreover, the greenhouse gas emissions from solar projects are more than offset by the avoided emissions from a fossil-fueled power plant with the same generating capacity. As such, a solar facility at either site would result in a positive

effect upon global climate change. The level of greenhouse gas emissions and beneficial climate change impacts resulting from solar development of the Mendota site would be similar to the level of beneficial climate change impacts associated with development of the WSP site.

Land Use and Planning: As noted above, the Mendota Site includes 3 inhabited ranch complexes with a total of 4 dwellings within the site, plus 5 ranch complexes with a total of 24 dwellings adjacent to the site. By comparison, there are no ranches or rural dwellings within the WSP site, and 2 ranch complexes with 22 dwellings adjacent to the WSP site. Any permanent visual impacts to the residential receptors at both sites would be minimized by existing mature trees and landscaping at the residential properties. During construction, the inholding residents at the Mendota site would be subject to equipment noise and dust when grading and construction activity occurs on the immediately surrounding lands. By comparison, most residences located in proximity to the WSP site would be located several hundred feet away and well off-site from the nearest grading and construction activity. Thus the level of land use adjacency impacts resulting from solar development of the Mendota site would be greater than the land use impacts associated with the WSP site.

Noise: In general, solar generating facilities result in increased noise levels associated with construction, while operational noise is negligible. During the construction phase, noise would be generated by: grading and excavation; construction vehicle traffic; and construction of the solar arrays and support facilities.

The lands surrounding both the Mendota and WSP sites are very sparsely populated and there are very few noise-sensitive receptors in the vicinity of either site. However, the Mendota site includes 4 dwellings within the site, while the WSP site has no dwellings on-site. The WSP site also has fewer dwellings on immediately adjacent lands. Given that the WSP site would affect fewer residential complexes, and that no residences would be subject to potential noise sources from all directions, the solar development of the WSP site would result in relatively lower levels of noise impact than at the Mendota site. Thus, while the construction noise impacts associated with solar development at either site would be temporary at any given location, and would likely be less than significant for all receptors, the noise impacts associated with the Mendota site would be greater than the noise impacts associated with the WSP site.

Public Services: The primary public services required for the solar generating facilities include fire protection and police services. Fire protection services for the Mendota site would be provided by the Fresno County Fire Department, and the WSP site would be served by the Kings County Fire Department, with service provided from nearby stations in each respective county. There is a low risk of structure fire or wildfire associated with the solar generating facilities, and neither site is located in a high fire hazard area. Although the solar facilities would result in a slight increase in demand for fire services, they would not result in the need for new or expanded fire department facilities, so the impact at either site would be less than significant. The level of impact to fire services resulting from solar development of the Mendota site would be similar to the fire services impacts associated with solar development of the WSP site.

Police services for the Mendota site would be provided by the Fresno County Sheriff's Department, and the WSP site would be served by the Kings County Sheriff's Department, while and the California Highway Patrol would serve both sites. The solar generating facilities at either site would include real-time video monitoring of facilities, with response from off-site security staff as needed. Although the solar facilities would result in a slight increase in demand for police services, they would not result in the

need for new or expanded Sheriff's Department facilities so the impact at either site would be less than significant. The level of impact to police services resulting from solar development of the Mendota site would be similar to the police services impacts associated with solar development of the WSP site.

Transportation/Traffic: Solar facilities generate the most traffic during their construction phases, and very low traffic volumes during operations. Construction activity results in traffic generation from construction workers commuting from the surrounding communities, materials trucks hauling project components off-site locations, and dump trucks and concrete trucks hauling aggregate and ready-mix concrete from regional sources. The Mendota site would be developed with similar solar PV generating facilities as planned for the WSP site, with similar pacing of construction, the volume of peak traffic generated would be the same for both sites. During construction, traffic management plans would be required for either site to manage large loads and slow moving vehicles. Both the Mendota and WSP sites have direct access to I-5 via State highways and improved County roads, and these access routes would be adequate to accommodate traffic volumes during construction and operation of solar facilities. Although construction of the solar facilities would result in temporary increases in traffic volumes on the roadway system, the traffic impacts associated with solar development at either site would be less than significant. The level of traffic impacts resulting from solar development of the Mendota site would be similar to the traffic impacts associated with solar development of the WSP site.

Utilities and Service Systems: The solar facilities at either the Mendota site or the WSP site would require water supply, wastewater disposal, and solid waste disposal, as discussed below.

Water Supply

Water supply for the solar facilities would be required during both the construction and operational phases. During grading and construction, water would be needed for dust control and cleaning of equipment and vehicles. For both the Mendota site and the WSP site, it is expected that existing on-site agricultural wells would provide non-potable water during construction, and that potable water for consumption by construction workers would be provided by bottled water brought to the site. Given that the project size, operational characteristics, and site conditions would be very similar for either site, the construction water demands during construction would be very similar for both the Mendota site and the WSP site.

Operational water demands would include water for periodic panel washing and general maintenance requirements. For both the Mendota and WSP sites, it is expected that operational water supply would consist of imported surface water provided through Westlands Water District. This allocation is considered adequate for panel washing and general maintenance of PV solar operations. Therefore, no groundwater would be pumped to support PV solar operations at either site.

In summary, the water supply impacts related to the construction and operation of solar facilities at both sites would be less than significant. The level of water supply impact resulting from solar development at the Mendota site would be similar to the impacts associated with the WSP site.

Wastewater

During both the construction and operational phases, domestic wastewater generated by solar facilities at either site would be accommodated through the use of portable toilet facilities, with regular cleanout and disposal by a contractor. The wastewater disposal impacts would be less than significant for both

sites. The level of wastewater impact associated with solar development of the Mendota site would be similar to the impact associated with the WSP site.

Solid Waste

Solid waste would be generated during construction and operation of the solar generating facilities. There are no constraints to solid waste collection, and there is sufficient landfill capacity to accommodate non-recyclable waste from a solar facility at either the Mendota or WSP site. The solid waste disposal impacts would be less than significant for both sites. The level of solid waste impact resulting from solar development of the Mendota site would be similar to the impact associated with the WSP site.

In summary, the impacts associated with the solar development of the Mendota alternative site would be similar to those associated with the planned WSP site in most categories including: agricultural resources, air quality, cultural resources and paleontology, geology and soils, greenhouse gas emissions, hazards and hazardous materials, hydrology and drainage, public services, traffic, and utilities and service systems. However, impacts at the Mendota site would be greater than the WSP site for the following impact categories: aesthetics, biological resources, land use and planning, and noise. There are no impact categories for which the Mendota site would result in a lower level of impact than the planned WSP site, and there are no categories for which the Mendota site would substantially lessen or avoid a significant impact associated with the proposed WSP project site. More importantly, the Mendota alternative site would not reduce or eliminate a significant and unavoidable impact, since there are no significant unmitigable impacts associated with the development of a solar generating facility at the proposed WSP project site.

5.2.5. COMPARISON OF WSP ALTERNATIVES AND IDENTIFICATION OF THE ENVIRONMENTALLY SUPERIOR ALTERNATIVE

The foregoing analysis of comparative impacts between the proposed project and the project alternatives is summarized in Table ALT-1 on the next page.

While the No Project Alternative would result in somewhat lower impacts in several categories, it would result in substantially greater impacts in others such as agricultural resources, greenhouse gas emissions/climate change, and water supply. Therefore, the No Project Alternative would not represent an environmentally superior alternative to the planned WSP solar development. Moreover, the No Project Alternative would not achieve any of the basic objectives of the WSP project (see Section *I. C. Project Objectives*), as restated at the beginning of this chapter. For example, the No Project Alternative would not meet the objective of the retiring the physically-impaired farmland of the WSP site; nor would it end deliveries of imported irrigation water to the WSP site, and allow that water be transferred to more productive farmland nearby. The No Project Alternative would not help reduce reliance on the aquifer, nor would it help end the cumulative degradation of soil and groundwater resources through cyclic salt loading from irrigation. The No Project Alternative would not meet the objective of helping to achieve the RPS goals for renewal energy, nor would it help reduce greenhouse gas emissions pursuant to AB 32.

TABLE ALT-1

SUMMARY COMPARISON OF WSP SOLAR DEVELOPMENT WITH PROJECT ALTERNATIVES

Impact Category	Level of Impacts			
	Westlands Solar Park	Impacts of Alternatives, Compared to WSP		
		No Project Alternative	Reduced Project Size Alternative	Alternative Project Site
Aesthetics	Less than Significant	Lower	Lower	Greater
Air Quality	Less than Significant	Similar	Similar	Similar
Agricultural Resources	Less than Significant	Greater	Greater	Similar
Biological Resources	Less than Significant	Lower	Lower	Greater
Cultural & Paleontological Resources	Less than Significant	Lower	Lower	Similar
Geology & Soils	Less than Significant	Lower	Lower	Similar
Greenhouse Gas Emissions	Less than Significant	Greater	Greater	Similar
Hazards & Hazardous Materials	Less than Significant	Similar	Similar	Similar
Hydrology & Water Quality	Less than Significant	Lower	Lower	Similar
Land Use & Planning	Less than Significant	Lower	Lower	Greater
Noise	Less than Significant	Lower	Lower	Greater
Public Services	Less than Significant	Lower	Lower	Similar
Traffic/Transportation	Less than Significant	Lower	Lower	Similar
Utilities & Service Systems	Less than Significant	Greater	Greater	Similar
Environmentally Superior Alternative?	Yes	No	No	No

The CEQA Guidelines, at Section 15126.6(e)(2), provide that the EIR shall also identify an environmentally superior alternative from among the other alternatives. The Reduced Project Size Alternative would result in somewhat lower levels of impact under most categories relative to the planned WSP solar development. However, all of the potential impacts associated with WSP solar development would be reduced to less-than-significant levels through mitigation measures to be incorporated into the proposed WSP project. Although the Reduced Project Size Alternative would not avoid or eliminate any significant project impacts which would not already be reduced to less-than-significant levels in the proposed WSP project, this alternative would be the environmentally superior alternative because it would result in generally lower levels of impact in most categories compared to the planned WSP solar development.

The Reduced Project Size Alternative would partially meet the basic objectives of the project, but not fully. The Reduced Project Size Alternative would fall short of meeting project objective of retiring all of the physically-impaired lands in the WSP site, and thus would also not fully meet the objective of redirecting the imported water allocations from the WSP site to non-impaired farmland where it can enhance the long-term viability of those agricultural operations.

The Reduced Project Size Alternative would fall short of meeting the basic project objective of providing for maximum development of the solar resources in the Westlands CREZ, and thus would not fully implement the objective of helping to achieve the State's RPS targets, and of providing for large reductions in greenhouse gas emissions. The Reduced Project Size Alternative would also fall short of meeting the objective of reducing reliance on groundwater resources, and of ending the cumulative degradation of the soil and groundwater resources through cyclic salt loading by agricultural irrigation. In summary, the Reduced Project Size Alternative would not be as effective as the proposed project in meeting the basic objectives of the project.

In conclusion, there are no environmentally superior alternatives to the WSP project which would go as far as the proposed WSP project in meeting the project objectives.

5.2.6. WSP ALTERNATIVES CONSIDERED BUT NOT INCLUDED IN DETAILED ANALYSIS

During the course of selecting a reasonable range of project alternatives, the CEQA Guidelines require the following:

> "The EIR should also identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency's determination." (CEQA Guidelines, Section 15126.6(c).)

The alternatives considered in the course of this analysis are identified below, along with brief explanations as to why they were not carried forward for detailed analysis.

Alternative Solar Technologies

Other technologies that utilize solar radiation include concentrated solar power (CSP) technologies such as solar power tower and parabolic trough. These represent different forms of thermal solar generation, which rely on controlled heating of water or other liquids by reflected and focused sunlight

to drive steam turbines. While these processes all involve cooling cycles, this can be largely accomplished by fans (dry cooling) although some volume of water is still required in the cooling process. In addition, the energy requirements of the fans reduces the overall generating output of the power plant. Thermal solar technologies were not considered as viable options for WSP for several reasons. First, thermal solar facilities require a minimum solar resource value of 6.0 kWh/M^2/day, and optimally 7.0 kWh/M^2/day or greater available in the Mojave Desert (NREL 2015). Kings County has a solar resource value of 5.5-6.0 kWh/M^2/day, which is sufficient for PV solar but less than the minimum requirement for thermal solar (CEC 2005). Due to relative lack of water for cooling requirements, thermal solar facilities would need to be dry cooled which would reduce generating efficiency by 10 percent. (Water requirements for CSP would be approximately 0.0936 afy/ac [includes 0.0624 afy/ac for dry cooling, and 0.0312 for mirror washing], or 15 acre-feet per 160 acres, which would exceed WWD's water allowance for solar facilities of 5 acre-feet per 160 acres per year)(NREL 2015). Overall land requirements per MWhr for thermal solar are similar to PV solar (NREL 2013). Combined with the relatively large capital costs involved in bringing solar thermal facilities online, the lower generating efficiencies would necessitate pricing levels that would not be competitive with solar PV at the WSP site, particularly since PV installation costs have dropped much more than thermal power installation costs over the past 5 years. In addition, thermal solar projects such as solar power tower involve greater levels of impacts in terms of visual impacts (400- to 500-foot towers and tall mirror arrays), intense glare (from top of towers), as well as bird mortality due to solar flux (intense heating of the air near the power tower). The operational Ivanpah thermal solar facility in the Mojave Desert includes 3 towers for 394 MW of generation on 4,000 acres, indicating that solar power tower facilities at the WSP site would require 15 towers. Thus, the impacts associated with CSP technologies would be substantially greater than those associated with solar PV, and these alternative technologies would not reduce any impacts associated the planned WSP solar facilities. Therefore, this alternative was not evaluated further.

Alternative Forms of Renewable Energy

In addition to solar generation, other qualifying forms of electrical generation under the State's Renewable Portfolio Standard (RPS) include wind generation, small hydroelectric plants, and cogeneration. These forms of electrical generation are also permitted in the Kings County General Plan for agriculturally-designated areas. The WSP plan area does not include adequate wind resources to support wind generation. Hydroelectric power generation is not viable given the lack of sufficient water and absence of steep topographic gradients required for hydro. Cogeneration consists of capturing waste heat produced during thermal power generation; however, there are no residential, commercial, or industrial facilities in the WSP vicinity that could utilize the waste heat as a substitute for their on-site fossil fueled or electrically powered heating systems. Therefore, alternative forms of renewable energy production would not be feasible within the WSP plan area, and thus were not evaluated further.

Distributed Generation

Distributed generation (DG) consists of numerous small-scale generation systems that do not require connection to the state transmission grid but are connected to the local power distribution system at or near locations where the energy is used. The California Energy Commission (CEC) defines renewable DG projects as 20 MW or smaller. Types of renewable generation include solar, wind, biomass, geothermal, and small hydropower. Renewable DG is divided into two major categories: self-generation DG and wholesale DG.

Self-generation or "behind-the-meter" DG is typified by rooftop solar on residential, commercial, industrial, and government buildings, or on carports or shade structures for playgrounds and parks. These facilities consist of small generators of 1 MW or less and are subject to various incentives administered through the California Solar Initiative under the Self-Generation Incentive Program. Much of the power generated is consumed at the individual DG sites, although some generators produce surplus power that would be conveyed offsite for local and regional distribution. The implementation of "net metering" by utility companies allows excess rooftop solar to be exported from the DG site to the distribution system during non-peak usage hours when it is not needed at the small DG site, and then allows the DG site to recapture the power from the distribution system during peak usage hours when rooftop solar panels at the DG site are not producing sufficient energy to meet on-site needs.

Wholesale DG includes commercial generators producing between 1 and 20 MW. There are numerous operating and pending projects for wholesale PV solar projects in the State, most of which consist of solar PV projects, but also include a few wind projects.

Distributed generation would not meet the project objectives because it would not provide for the generation of 2,000 MW of utility-scale renewable power near existing transmission, or the beneficial reuse and retirement of 21,000 acres of degraded farmland, or the reduction of overall water requirements in an area with overburdened water resources. Moreover, distributed generation by nature involves installation of small renewable generation facilities on numerous dispersed small sites. The applicant does not own numerous sites that would be required to generate 2,000 MW of power, and it would be economically and logistically infeasible for the project proponent to undertake assembly and development of the many sites required.

Moreover, this alternative would not meet the basic objectives of the project. In particular, this alternative would not meet the project objectives of providing for the generation of 2,000 MW of utility-scale renewable power near existing transmission, or the beneficial reuse and retirement of 21,000 acres of degraded farmland, or the reduction of overall water requirements in an area with overburdened water resources. Therefore, the distributed generation alternative was not evaluated further.

Demand Management/Conservation

This alternative would involve increased energy conservation and demand-side management within the utilities' service areas instead of developing 2,000 MW of new generation within WSP. Energy conservation is ongoing through implementation of increasingly stringent energy-efficient building requirements of the California Building Code and appliance standards, as well as financial incentive programs. Public utilities are also required to achieve aggressive energy efficiency goals established by the CPUC. Given the mandates and incentives for energy conservation under baseline conditions, it is unlikely that sufficient additional energy conservation is achievable as a substitute for the 2,000 MW of new generation planned for WSP, and it would be economically and logistically infeasible for the project proponent to undertake a private state-wide program to attempt it.

Moreover, this alternative would not meet the basic objectives of the project. In particular, this alternative would not meet the project objectives of providing for the generation of 2,000 MW of utility-scale renewable power near existing transmission, or the beneficial reuse and retirement of 21,000 acres of degraded farmland, or the reduction of overall water requirements in an area with

overburdened water resources. Therefore the demand management/conservation alternative was not evaluated further.

5.3. ALTERNATIVES TO WSP GEN-TIE CORRIDORS

The purpose of the alternatives analysis under CEQA is to: "…focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project…" (CEQA Guidelines, Section 15126.6(b)). As discussed throughout Chapter 3 of this EIR, all of the potential impacts associated with the WSP Gen-Tie Corridors can be avoided or mitigated to less-than-significant levels through mitigation measures identified in this EIR. As such, there are no impacts resulting from the planned gen-tie projects that would be significant and unavoidable. In the absence of significant and unavoidable impacts, CEQA does not require the evaluation of alternatives that would avoid or substantially lessen such significant impacts. Nevertheless, the following two alternatives are briefly discussed below for the gen-tie corridors: the No Project Alternative, and Gen-Tie Route Alternatives.

No Project Alternative

The No Project Alternative assumes that the planned WSP gen-tie projects would not be constructed. This alternative consists largely of continuing the current farming and grazing operations within the corridor areas. The potential impacts associated with the No Project Alternative would be lower than those associated with the planned WSP gen-tie projects in all impact categories except greenhouse gas emissions/climate change. However, since the planned gen-tie projects result in no significant and unavoidable impacts, the No Project Alternative would not eliminate or substantially reduce such impacts. On balance, the No Project Alternative would represent an environmentally superior alternative to the planned WSP gen-tie projects. However, the No Project Alternative would not fulfill any of the project objectives, as restated at the beginning of this chapter, particularly the main objective of providing delivery of renewal solar power to the electrical grid. Without a means of delivering the solar power generated at the Westlands Solar Park, the development of the WSP plan area with solar PV facilities would not be technically feasible and thus would not occur. Thus, the No Project Alternative would also result in failure to meet the main WSP project objectives of helping to meet the state's renewable energy and greenhouse gas reduction targets, retiring all of the physically-impaired lands of the WSP site from irrigated agriculture, and maximizing reallocation of scarce imported water resources to more productive agricultural operations.

Gen-Tie Route Alternatives

As described in Section *2.0. Project Description*, the proposed project includes two planned WSP Gen-Tie Corridors to serve the Westlands Solar Park. These include the WSP-South to Gates Gen-Tie Corridor, which would consist of a single row of 230-kV monopoles, and the WSP-North to Gates Gen-Tie Corridor, which could also consist of a single row of 230-kV monopoles. In both cases, optional configurations would consist of two parallel 230-kV gen-ties lines within each corridor. If one of the corridors is ultimately planned and designed to include two parallel gen-tie lines, then it is unlikely that the other gen-tie line would be constructed. Since any of these configuration options may be followed at the project level, an equal level of analysis is presented for all these options within the main body of this EIR. This is primarily accomplished through consideration of a 350-foot wide gen-corridor, capable of accommodating two parallel gen-tie lines, for each gen-tie corridor. As such, the full analysis of

feasible alternatives to the gen-tie corridors is embodied in the main topical analyses in this EIR. No other feasible gen-tie routes connecting the Westlands Solar Park with the Gates Substation have been identified. Based on the information presented here, no further evaluation of alternative gen-tie routes is required.

Summary – Environmentally Superior Alternative

The potential impacts associated with the No Project Alternative would be lower than those associated with the planned WSP Gen-Tie Corridors in all impact categories except greenhouse gas emissions/global climate change. However, since the planned gen-tie projects result in no significant and unavoidable impacts, the No Project Alternative would not eliminate or substantially reduce such impacts. On balance, the No Project Alternative would represent an environmentally superior alternative to the planned WSP Gen-Tie Corridors. However, the No Project Alternative would not achieve any of the main project objectives, as discussed above.

The CEQA Guidelines, at Section 15126.6(e)(2), provide that if the environmentally superior alternative is the No Project Alternative, the EIR shall also identify an environmentally superior alternative from among the other alternatives. As discussed above, there are no feasible alternative routes to the planned WSP Gen-Tie Corridors, beyond the configuration options addressed in the body of this EIR. Therefore, apart from the No Project Alternative, which would not achieve the project objectives, there is no environmentally superior alternative to the planned WSP Gen-Tie Corridors.

REFERENCES/BIBLIOGRAPHY – PROJECT ALTERNATIVES

Caltrans 2013 — California Department of Transportation (Caltrans). 2013. *State Route 180 Westside Expressway Route Adoption Study – FEIR/FEIS*. March. http://www.caltrans.ca.gov/dist6/environmental/projects/sr180westside/doc/180westside1_030613.pdf

CDOC 2014 — California Department of Conservation (DOC), Farmland Mapping and Monitoring Program (FMMP). 2014. *Fresno County Important Farmland 2014*. ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2014/fre14_w.pdf

CEC 2005 — California Energy Commission (CEC). 2005. *California Solar Resources – In Support of the 2005 Integrated Energy Policy Report*. April. Publication Number: CEC-500-2005-072-D. http://www.energy.ca.gov/2005publications/CEC-500-2005-072/CEC-500-2005-072-D.PDF

CEC 2016 — California Energy Commission (CEC). 2016. *2016 Integrated Energy Policy Report (IEPR)*. Publication Number: CEC-100-2016-003-CMD. October. http://docketpublic.energy.ca.gov/PublicDocuments/16-IEPR-01/TN213930_20161007T134148_Draft_2016_Integrated_Energy_Policy_R

eport_Update.pdf

EERE 2007 — Office of Energy Efficiency and Renewable Energy (EERE). *Renewable Energy Technology Characterizations – Solar Power Tower*. October. http://www1.eere.energy.gov/ba/pba/pdfs/solar_tower.pdf

Fresno County 2014 — County of Fresno. 2014. *Tranquillity Solar Generating Facility Project – Draft EIR*. May. http://www.co.fresno.ca.us/ViewDocument.aspx?id=59219

Fresno County 2016b — County of Fresno. *Photovoltaic Projects Submitted to Fresno County*. November 15, 2016 Update. http://www.co.fresno.ca.us/ViewDocument.aspx?id=57304

NRCS 2006 — U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS)(formerly Soil Conservation Service). 2006. Soil Survey of Fresno County California, Western Part. November. https://www.nrcs.usda.gov/Internet/FSE_MANUSCRIPTS/california/CA653/0/fresno.pdf

NREL 2013 — National Renewable Energy Laboratories (NREL). 2013. *Land Use Requirements for Solar Power Plants in the United States*. June. http://www.nrel.gov/docs/fy13osti/56290.pdf

NREL 2015 — National Renewable Energy Laboratories (NREL). 2015. *Concentrating Solar Power and Water Issues in the U.S. Southwest*. March. http://www.nrel.gov/docs/fy15osti/61376.pdf

USBR 2006 — U.S. Bureau of Reclamation. 2006. *San Luis Drainage Feature Re-Evaluation – Final EIS*. June 8. http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=61

USFWS 1998 — U.S. Fish & Wildlife Service (USFWS). 1998. *Recovery Plan for the Upland Species of the San Joaquin Valley, California*. http://esrp.csustan.edu/publications/pubhtml.php?doc=sjvrp&file=cover.html

6. OTHER CEQA CONSIDERATIONS

6.1. SIGNIFICANT UNAVOIDABLE IMPACTS

Section 15126(b) of the CEQA Guidelines requires that EIRs identify "significant effects which cannot be avoided if the proposal is implemented." This includes any significant impacts for which feasible mitigation measures are available but whose implementation would not reduce the impact to less-than-significant levels.

The significant unavoidable impacts associated with the Westlands Solar Park and the WSP Gen-Tie Corridors are addressed separately below.

Westlands Solar Park

As discussed throughout Chapter 3 of this EIR, all of the potential impacts associated with WSP solar development can be avoided or reduced to less-than-significant levels through mitigation measures to be implemented in conjunction with the project. There are no significant and unavoidable impacts associated with the solar development of the Westlands Solar Park.

The analysis of cumulative impacts for each environmental topic addressed in Chapter 3 found that there are no impacts associated with WSP solar development which, when considered in combination with other cumulative projects, would result in a significant and unavoidable cumulative impact, under both near-term and far-term conditions.

WSP Gen-Tie Corridors

As discussed throughout Chapter 3 of this EIR, all of the potential impacts associated with the WSP gen-tie projects can be avoided or reduced to less-than-significant levels through mitigation measures to be implemented in conjunction with the projects. There are no significant and unavoidable impacts associated with the WSP gen-tie projects.

The analysis of cumulative impacts for each environmental topic addressed in Chapter 3 found that there are no impacts associated with the WSP gen-tie projects which, when considered in combination with other cumulative projects, would be significant and unavoidable under both near-term and far-term conditions.

6.2. GROWTH-INDUCING EFFECTS OF THE PROPOSED PROJECT

Section 15126.2(d) of the CEQA Guidelines stipulates that the growth-inducing impact of a project be addressed as follows: "[d]iscuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth (a major expansion of a waste water treatment plant might, for example, allow for more construction in service areas). Increases in the population may tax existing community service facilities, requiring the construction of new facilities that could cause significant environmental effects."

Typically, growth-inducing effects would be considered significant if a project may result in population growth that is above levels assumed in local and regional land use plans, or would result in urban growth beyond the areas designated for such growth in such land use plans.

The growth-inducing effects associated with the Westlands Solar Park and the WSP Gen-Tie Corridors are addressed separately below.

Westlands Solar Park

Removal of Physical Obstacles to Growth

Growth inducement can occur where a project would result in expansions or extensions of infrastructure which can in turn support additional development. For example, road widenings add traffic capacity to the local transportation system which can facilitate further growth. Extensions of water and sanitary sewer lines to previously unserved areas can facilitate growth of neighboring lands to the extent that surplus capacity is available in the lines.

The WSP solar development would not result in any off-site improvements to urban infrastructure. The existing roadway network is sufficient to accommodate traffic generated during SGF construction and operation. Operational water needs would be provided from existing agricultural water pipelines operated by Westlands Water District. These deliveries are strictly limited to use by solar facilities only and the annual restrictions on water volumes to the relatively small volumes needed for SGF operation and maintenance would preclude more intense land uses such as urban development. Therefore, the WSP solar development would not induce growth through increased infrastructure capacities.

The WSP solar development would involve construction of off-site transmission lines to deliver the generated power to the electrical grid. Specifically, this would consist of the two 230-kV gen-tie lines that would extend from the WSP plan area to the Gates Substation to the west. These gen-tie lines would be sized to accommodate only the delivery of electrical generation from Westlands Solar Park. There would be no surplus capacity in the gen-tie lines that could serve additional electrical generation outside of the WSP plan area. Therefore, the off-site gen-tie lines would not be growth inducing.

Removal of Regulatory Obstacles to Growth

Growth inducement may occur where a project approval includes a major change in land use designation for the property, such as a General Plan amendment or zoning change which would allow the conversion

of rural lands to urban uses. Such a land use change could set a precedent which would increase pressure for similar conversion of adjacent or nearby lands.

The solar development of the Westlands Solar Park is fully consistent with the current Kings County General Plan and Development Code, both of which permit utility-scale PV solar development on certain agricultural lands such as those within the WSP plan area. Since no change in land use designation is required for WSP solar development, its approval would not set a precedent which might increase pressures for conversion of other lands. While the Kings County General Plan would allow for solar PV development on other agricultural lands within the County (subject to standards for commercial solar projects on agricultural land contained in the Development Code), the amount of solar development that will ultimately occur would be limited by state-level policy and conditions in the electric power market. Currently, the State's Renewable Portfolio Standard (RPS) is the primary factor that determines the scale and pace of statewide solar development, and any future increases in the RPS renewables target could increase the demand for solar power by Publicly Owned Utilities. Thus, while the amount of solar development that could theoretically be installed under the Kings County General Plan and Development Code is substantial, the amount of solar development that will ultimately occur will likely be limited by the upper limits of the RPS mandate (and County standards). The approval and construction of WSP solar facilities would not alter the current regulatory scheme that already allows solar development to occur on agricultural lands. Therefore, the WSP solar development would not be growth inducing by way of removing regulatory obstacles to future growth.

Stimulus for Economic Growth

Projects can stimulate economic growth through direct employment, as well as indirectly through demand for goods and services. This can contribute to incremental secondary effects such as increased hiring by suppliers. Projects can also generate additional property and sales tax revenue for local government, enabling expenditures on capital improvement projects that could also stimulate secondary economic activity. During the construction phase of development projects, temporary jobs are created and others supported in the purchase of materials.

During the peak construction period for a typical 250-MW solar facility, up to 430 construction workers would be on-site, while the average number of workers on the site during the 13-year WSP buildout period would be about half that number. Upon full buildout of WSP, the solar facilities would include a daily average of 80 operations and maintenance staff throughout the WSP plan area. Most solar components would originate from distribution centers in northern and southern California. Construction equipment would originate from inside the region. Materials such as aggregate and concrete would be supplied from local sources, as would the haul trucks and drivers that would deliver them. The employment generated by the WSP solar development would result in increased purchases of goods and services by the workers, and could in turn generate secondary employment in the local retail and service sectors. To the extent that the solar facilities would seek materials, supplies, and equipment from local sources, additional economic activity could be stimulated in the area. Increased local sales taxes resulting from increased local purchases by workers and solar companies could contribute to local government hiring, purchases, and procurement. Property tax receipts would increase only modestly since solar improvements are exempt from property tax, and increases in land values would be limited by the Williamson Act and Farmland Security Zone contracts. The overall economic stimulus resulting from WSP solar development would be relatively modest and would not be sufficient to induce economic growth in the region.

Population and Housing Growth

New projects can result in added population and increased local housing demand, to the extent that the project employees do not already live within commuting range. For WSP solar development, most employees would consist of construction workers. Given the high unemployment rate in the region, it is expected that construction workers would be drawn from the local labor pool and would include few if any workers who would migrate to the area. It is expected that the permanent staffs of the solar facilities would also consist of existing residents in the area, although some specialized technical or supervisory personnel may transfer to the area. Thus WSP solar development may result in a slight increase in demand for housing locally. Any minor increase in potential housing demand that would be generated by the project would not be significant, and would be readily absorbed by the local housing inventory. Therefore, the population and housing growth induced by WSP solar development would be negligible.

Increased Power Generation

The WSP solar facilities would add to the state's overall energy supply, which indirectly supports growth and development. However, the solar PV generation at WSP is intended to help meet the State's 33 percent (now 50 percent) renewable energy target under the Renewable Portfolio Standard (RPS), the intent of which is to replace fossil-fueled generation with renewable generation. The WSP solar development is not intended as source of baseload power to meet increased electrical demand to support growth. Moreover, the decision to provide electrical service to a particular location follows after local land use decisions are made to approve development at that location. Since there are no electrical supply constraints to the provision of electric service at a given location (although improvements to the local distribution network may be needed to serve a particular site), any increase in statewide power supply would have no effect in terms of constraining or inducing growth. Ongoing energy planning efforts at the state level by Cal ISO, CPUC, and CEC, combined with procurement programs by the electric utilities, ensure that power generation is constantly augmented to meet projected growth in demand, before it occurs, and that improvements to the transmission grid are in place when needed to convey power from the generation facilities to the electricity users**.** As such, the statewide electrical infrastructure is constantly planned and improved to ensure that electric power supplies remain adequate to serve growth that is approved by others in accordance with local land use regulations and approval procedures. Thus, while the generation capacity added by WSP solar facilities would not remove any infrastructure obstacle or constraint to growth and therefore would not be considered growth inducing.

In summary, the WSP solar facilities would have a less-than-significant growth-inducing effect by way of producing a minor economic stimulus locally. This would occur through direct employment of construction workers and operations staff by the solar facility operators, and through secondary demand for goods and services. WSP solar development could also result in a slight increase in local housing demand. WSP solar development would not result in growth inducement by way of removing physical or regulatory obstacles to further growth, or through increased power generation. In conclusion, the WSP solar facilities would not have a significant growth-inducing effect.

WSP Gen-Tie Corridors

Growth Resulting from Increased Employment

As discussed in Chapter *2. Project Description*, the WSP gen-tie projects are expected to have a total workforce of approximately 100 construction workers. It is expected that most of construction personnel would be drawn from the communities in the region, although some specialized workers may need to be brought in from outside the area and be temporarily lodged in local hotels. To the extent that workers would relocate to the area to work on the gen-tie projects, a minimal increase in housing demand could occur, but the growth effects would be negligible. The gen-tie line construction would be temporary, occurring over a period of less than one year for each gen-tie, and thus would have no long-term effect in terms of employment or population growth.

Operation and maintenance of the gen-tie lines would require minimal staffing which would consist of current utility employees. Therefore, no new permanent jobs would be created, and no long-term effects would occur in terms of employment or population growth.

Added Transmission Capacity

The gen-tie lines would include only enough transmission capacity to convey power from the WSP solar facilities to the Gates Substation. They would not include any surplus transmission capacity to serve other solar PV projects in the area. Thus, the gen-tie projects would not be growth inducing.

In summary, the WSP gen-tie projects would not result in growth inducement by way of generating permanent increases in population or employment, or through excess transmission capacity.

6.3. SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

This section was prepared pursuant to CEQA Guidelines Section 15126.2(c), which requires a discussion of the significant irreversible changes that would result from the implementation of a proposed project. Significant irreversible changes include the use of nonrenewable resources, the commitment of future generations to similar use, providing transportation access to previously inaccessible areas, irreversible damage resulting from industrial accidents associated with the project, and irretrievable commitments of resources. The significant irreversible environmental changes associated with the Westlands Solar Park and the WSP Gen-Tie Corridors are discussed in turn below.

Westlands Solar Park

Use of Nonrenewable Resources

The construction phase for each WSP solar facility would involve the use and consumption of non-renewable building materials such as concrete, metals, and composites. Nonrenewable resources and energy would also be consumed in the manufacturing and delivery of solar PV components, the extraction, processing and hauling of building materials, transportation by workers to and from the site, as well as in grading and excavation. The operation of the solar facilities would consume energy in the form of electricity and natural gas for multiple purposes including operation of solar tracking systems, solar monitoring and control systems, building heating and cooling, lighting, and appliances. Energy in the form

of gasoline and diesel fuel would be used for private vehicles and delivery trucks that would travel to the project, as well as maintenance vehicles used at each solar facility. Use of nonrenewable materials and energy sources represents an irretrievable commitment of resources. However, the startup and operation of the completed solar facilities would allow the decommissioning or decreased use of fossil-fueled generating stations elsewhere. These offsets would more than compensate for the relatively minor input of non-renewable energy sources consumed in the construction and operation of the WSP solar facilities. Also, most of the materials used in solar generating facilities are recyclable. The solar panels, racking systems and other components would be recycled for reuse upon decommissioning of each solar facility. Thus, while some irretrievable commitment of nonrenewable resources would occur, this would be more than offset by the avoided commitment of nonrenewable resources at fossil generating facilities that would occur elsewhere in the state without the WSP solar facilities. Therefore, the WSP solar facilities would not result in a significant irretrievable commitment of nonrenewable resources.

Opening New Areas for Transportation Access

The WSP solar facilities would all have entrances on existing County roads such as Avenal Cutoff Road, Laurel Avenue, and Nevada Avenue. All WSP solar facilities would have internal gravel access driveways for operations and maintenance access. However, these driveways would only be available for internal access to the solar facilities and access to them would be restricted by entry gates and perimeter security fencing around each solar facility. Therefore, the WSP solar facilities would not include the construction of public roadways or highways that could be used to provide public access to previously inaccessible areas. Thus WSP solar development would not result in indirect commitment of resources in the development of such previously inaccessible areas.

Commitment of Future Generations to Similar Use

The solar facilities within the WSP plan area would each have a productive life of about 25 years, with the possibility of minor time extensions beyond that. At the end of 25 years, each facility would be decommissioned and the soils would be reclaimed to a condition suitable for agricultural cultivation, in accordance with Kings County conditions that would be placed on the approval of Conditional Use Permits for each solar facility. After decommissioning, the Kings County General Plan and Development Code would limit future uses of these lands to agriculture and related operations. Therefore, the development of the WSP plan area for solar PV facilities would not commit future generations to solar PV or similar land uses.

Potential for Environmental Accidents and Contamination

Construction and operation of the WSP solar facilities would involve the use of hazardous materials such as fuels, lubricants, and cleaning solvents, and the potential use of solar panels with imbedded toxic elements. However, all on-site activities would be subject to implementation of hazardous materials management plans, spill response plans, and a Storm Water Pollution Prevention Plan (SWPPP) with Best Management Practices (BMPs). Any solar panels containing toxic elements would be safely recycled by the manufacturers. Thus the potential for permanent damage or contamination due to environmental accidents is negligible.

In summary, the planned WSP solar facilities would not result in significant irretrievable use of nonrenewable materials, open new areas to transportation access, commit future generations to similar

uses, or result in environmental accidents causing permanent damage or contamination. Therefore, the planned WSP solar facilities would not result in significant irreversible environmental changes.

WSP Gen-Tie Corridors

Use of Nonrenewable Resources

Construction of the WSP gen-tie projects would require a permanent commitment of natural resources resulting from the direct consumption of fossil fuels, construction materials, and the manufacture of new equipment, much of which would not be recyclable at the end of the useful life of the gen-tie facilities. Some proportion of non-renewable energy would also be consumed in the manufacture of equipment and the construction of the gen-tie lines. In addition, the gen-tie projects would involve the permanent removal of approximately 2 acres of important farmland.

During the operational phase, the gen-tie lines would be solely dedicated to delivery of renewable solar energy to the electrical grid. By facilitating delivery of renewable energy to the grid, the gen-tie lines would indirectly offset the consumption of non-renewable resources consumed in their manufacture and construction.

Opening New Areas for Transportation Access

The WSP gen-tie projects would require temporary access driveways for construction and some permanent access driveways for operation and maintenance. In the areas of the valley floor traversed by the gen-tie corridors, temporary and permanent access to transmission towers would largely be gained by passing through farmlands from the nearest rural roadway or field perimeter lane. Thus few if any permanent access driveways would be constructed for the gen-tie lines. Therefore, the WSP gen-tie projects would not involve the construction of public roadways or highways that could be used to provide public access to previously inaccessible areas. Thus, the WSP gen-tie projects would not result in indirect commitment of resources in the development of previously inaccessible areas.

Commitment of Future Generations to Similar Use

The use of the planned gen-tie corridors for transmission lines would essentially be permanent. While some transmission towers and conductors may be decommissioned over time, it is more likely that they would be replaced and upgraded with new equipment. The potential abandonment of the transmission corridors in the future is not currently foreseeable, so the construction of the planned gen-tie lines would be considered a permanent commitment to this or similar uses.

Potential for Environmental Accidents and Contamination

Hazardous materials that would be used during construction and operation of the WSP gen-tie projects would be used, stored, handled, and disposed of in accordance with applicable federal, state, and local regulations to minimize the potential for accidental discharges of contaminants into the environment.

6.4. ENERGY CONSERVATION

As provided in Appendix F (Energy Conservation) of the CEQA Guidelines, an EIR must address the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful and unnecessary consumption of energy. As stated Appendix F, the means of achieving the wise and efficient use of energy include: 1) decreasing overall per capita energy consumption; 2) decreasing reliance on fossil fuels such as coal, natural gas, and oil, and; 3) increasing reliance on renewable energy sources.

The energy conservation characteristics of the Westlands Solar Park and the WSP Gen-Tie Corridors are addressed in turn below.

Westlands Solar Park

The construction of the WSP solar facilities would involve the consumption of fuels for vehicles and equipment. Energy would also be used in the manufacture of the solar modules and associated equipment, although the solar modules and other array equipment would be recyclable. Construction materials would also be required to be recycled to the extent practicable by Kings County. The efficient use of fuel during construction would occur through implementation of the San Joaquin Valley Air Pollution Control District's requirement for clean fleet equipment to minimize emissions under Rule 9510 (ISR) which would also indirectly result in greater fuel efficiency. In addition, the WSP solar facilities would be required to conform to applicable state energy standards for construction.

Operationally, the main objective of the WSP solar facilities is to generate renewable solar energy in order to provide for the reduced statewide reliance on non-renewable fossil fueled generation. The full buildout of Westlands Solar Park would allow for the decommissioning of the equivalent of several large natural gas fired power plants. This would also result in energy saved that would otherwise be consumed in transporting fossils fuels to the conventional power plants. Thus, the WSP solar facilities would have a substantial beneficial effect in terms of reducing reliance on fossil fuels and increasing reliance on renewable energy resources.

In summary, the WSP solar facilities would not have an adverse effect in terms of energy conservation, and would have a substantial beneficial effect by way of implementing the statewide goal of conversion from fossil-fueled power generation to renewable power generation.

WSP Gen-Tie Corridors

The construction of the WSP gen-tie projects would involve the consumption of fuels for vehicles and equipment. Energy would also be used in the manufacture of transmission towers and electrical cables, some of which would be recyclable. Construction materials would also be required to be recycled to the extent practicable pursuant to the construction standards of the proponent utility.

Operationally, the main objective of the WSP gen-tie projects is to deliver the renewable solar energy generated at Westlands Solar Park to the state electrical grid. This would help achieve the statewide goal of converting from fossil-fueled power generation to renewable power generation. Thus the

relatively small amount of energy consumed in construction of the gen-tie lines would be off-set by the critical role of the gen-tie facilities in enabling the delivery of the renewable solar generation from the Westlands Solar Park to the state electrical grid.

In summary, the WSP gen-tie projects would not have an adverse effect in terms of energy conservation, and would have a substantial beneficial effect by way of facilitating statewide conversion from fossil-fueled power generation to renewable power generation.

This page intentionally left blank

7. EIR AUTHOR AND CONSULTANTS

Author

Westlands Water District

Russ Freeman, Deputy General Manager – Resources
Kiti Buelna-Campbell, Senior Resources Engineer

Consultants

Bert Verrips, AICP
Environmental Consulting Services
Santa Ana, California

Bert Verrips, EIR Project Manager
Tom Camara, Design Graphics

Applied EarthWorks
Archaeological and Paleontological Consultants
Pasadena, California

Basin Research Associates
Cultural Resources
San Leandro, California

Illingworth & Rodkin
Noise and Air Quality Consultants
Petaluma, California

Karen E. Johnson, Water Resources Planning
Water Supply Assessment
Santa Ana, California

Live Oak Associates
Biological Consultants
Oakhurst, California

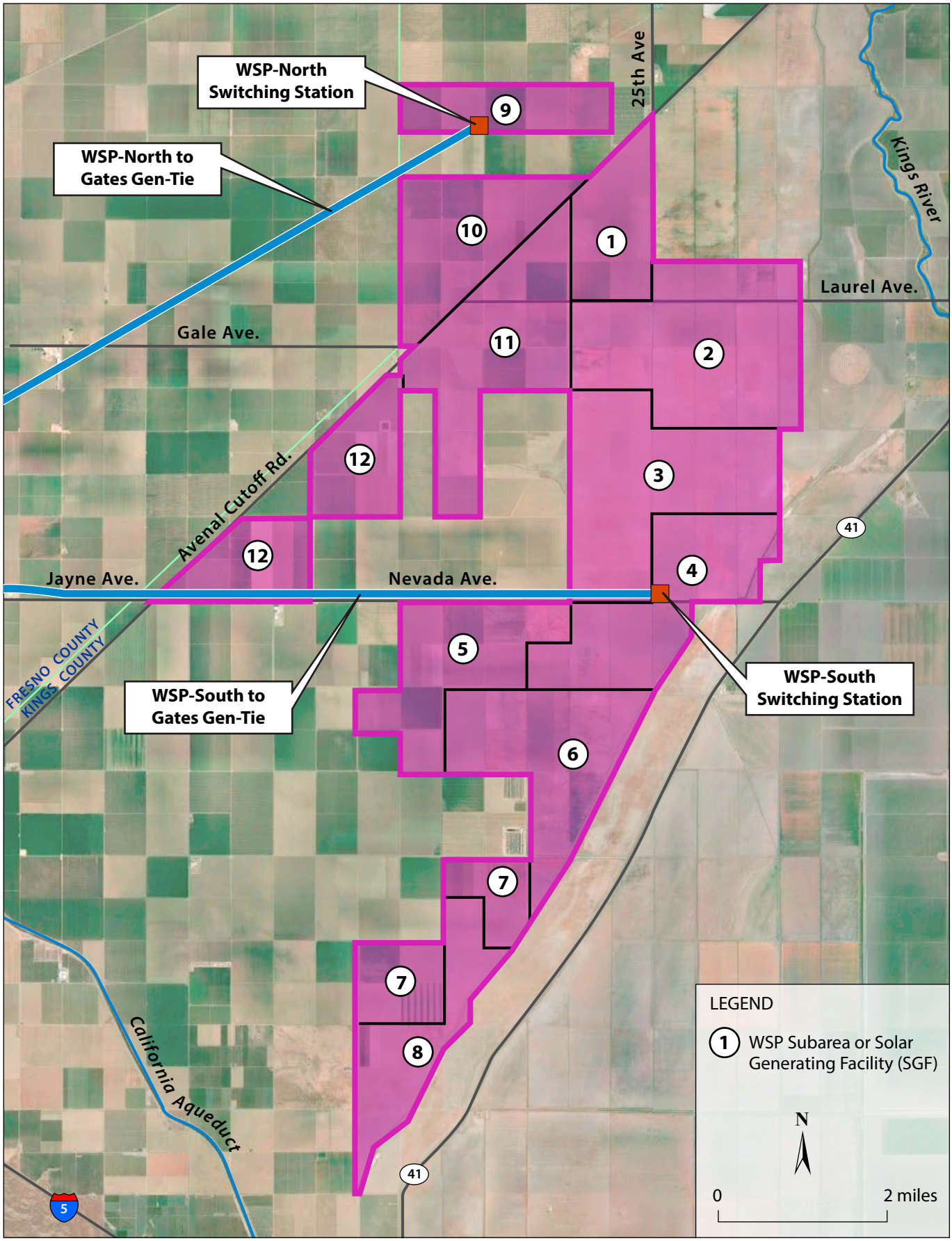
This page intentionally left blank

APPENDIX A

Westlands Solar Park Master Plan

and

WSP Gen-Tie Corridors Plan

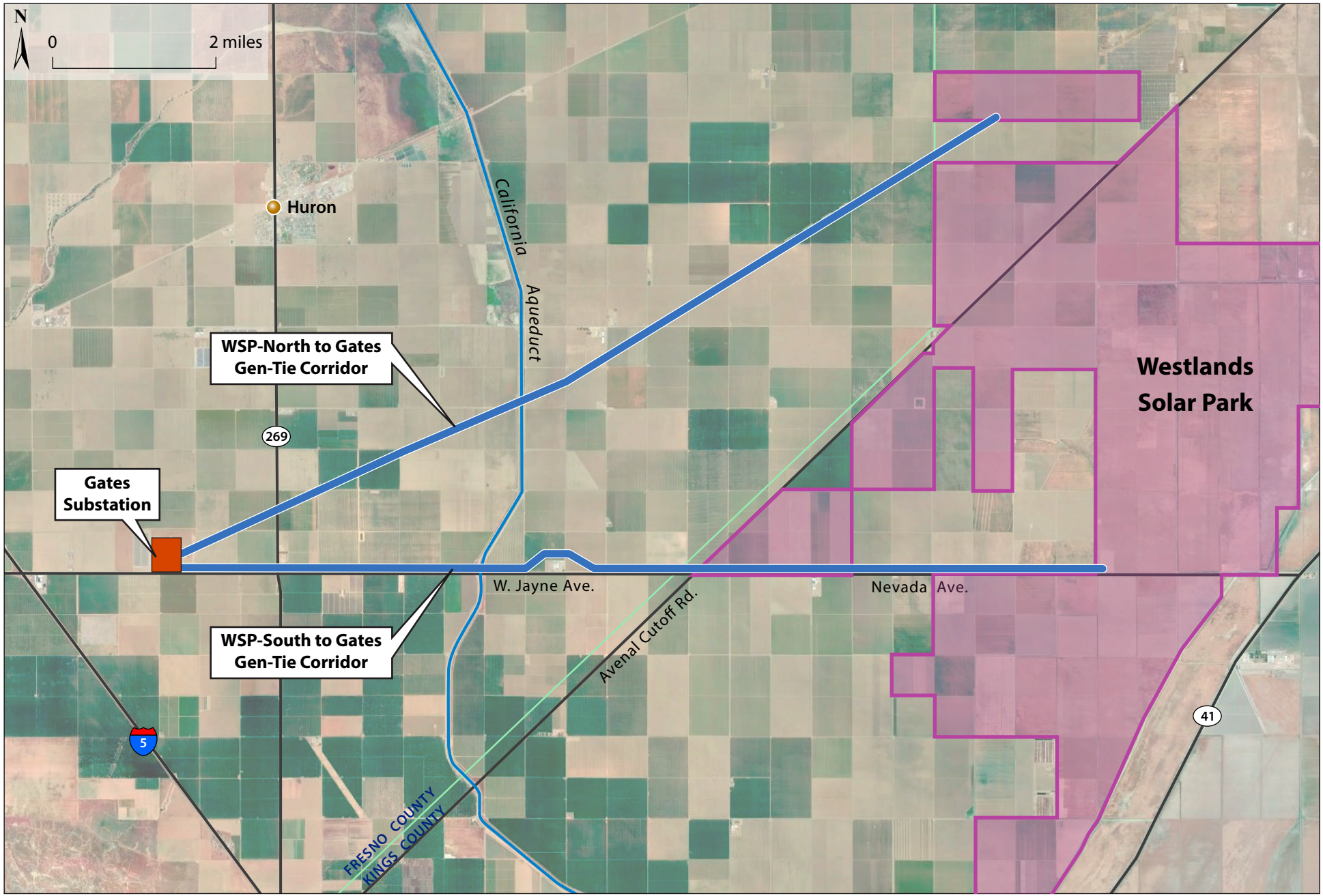


Base map: Google Earth, 2016

Westlands Solar Park Master Plan

Exhibit 1

This page intentionally left blank



Base Map: Google Earth, 2017

WSP Gen-Tie Corridors Plan

Exhibit 2

This page intentionally left blank

APPENDIX B-1

Revised Notice of Preparation (NOP) and Comments

August 2017

This page intentionally left blank

REVISED NOTICE OF PREPARATION

To: State Agencies
Responsible Agencies
Local and Public Agencies
Interested Parties
Trustee Agencies

From: Westlands Water District

3130 N. Fresno Street, P.O. Box 6056
Fresno, CA 93703-6056
Contact: Kiti Buelna-Campbell

Subject: Revised Notice of Preparation (NOP) of a Draft Environmental Impact Report On Westlands Solar Park (WSP) Master Plan and WSP Gen-Tie Corridors Plan

Original NOP issued March 13, 2013 **SCH #2013031043**

Westlands Water District (WWD or District) will be the Lead Agency and will prepare an Environmental Impact Report (EIR) for the project identified above. Westlands Water District is requesting comments on the scope and content of this EIR.

The original Notice of Preparation (NOP) was distributed for agency and public review on March 13, 2013. A public scoping meeting was held by WWD on April 9, 2013.

The distribution of this Revised NOP is intended to inform agencies and the public of changes to the plan that have been made since the original NOP was issued. These changes are listed below and described subsequently in this document.

- Reduction in size of the Westlands Solar Park Master Plan area from approximately 24,000 acres to approximately 21,000 acres.
- Removal of the "Westlands Transmission Corridor" from the transmission plan.
- Removal of the "Helm-Gregg Transmission Corridor" from the transmission plan.
- Renaming of the "Henrietta-Gates Transmission Upgrades" to "WSP-North to Gates Gen-Tie Corridor."
- Addition of the "WSP-South to Gates Gen-Tie Corridor."

Due to the time limits mandated by State law, we ask that you respond at the earliest possible date, but *not later than thirty (30) days* after receipt of this notice, which date is anticipated to be October 2, 2017. Please submit your comments by 5:00 P.M. on October 2, 2017.

Please send your response to **Kiti Buelna-Campbell** at the address shown above. We will need the name of a contact person in your agency or organization.

Project Title: Westlands Solar Park (WSP) Master Plan and WSP Gen-Tie Corridors Plan

Project Location: Avenal Cutoff Road and Laurel Avenue, Kings County

Project Proponents: Westlands Water District and Westside Holdings LLC

Date: August 30, 2017

Signature: _____

Jose Gutierrez

Title: Deputy General Manager - Resources

Reference: California Administrative Code, Title 24, Sections 15082(a), 15103, and 15375

1. Project Title

Westlands Solar Park Master Plan and WSP Gen-Tie Corridors Plan

WSP Master Plan and Gen-Tie Corridors Plan include:

1. *Westlands Solar Park (WSP) Master Plan* (see Figures 1 and 2)

   Consisting of all or part of the following Sections:

   Township 20S Range 18E – Sections 24, 25, 34, 35
   Township 20S Range 19E – Sections 4-9, 14-23, 26-28, 30, 33-35
   Township 21S Range 19E – Sections 3-10, 16, 20, 21, 29-31
   Township 22S Range 19E – Section 6

2. *WSP Gen-Tie Corridors Plan*

   Consisting of the following two gen-tie corridors:

   a. *WSP-South to Gates Gen-Tie Corridor* – A new 230-kV transmission corridor running parallel and adjacent to the north side of Nevada Avenue (Kings County) and Jayne Avenue (Fresno County) from the WSP plan area to the Gates Substation (see Figures 1 and 2)

   b. *WSP-North to Gates Gen-Tie Corridor* – A new 230-kV transmission corridor running parallel and adjacent to the existing Henrietta to Gates transmission corridor, between the WSP plan area to the Gates Substation (see Figures 1 and 2)

2. Lead Agency Name and Address

Westlands Water District
3130 N. Fresno Street, P.O. Box 6056
Fresno, CA 93703-6056

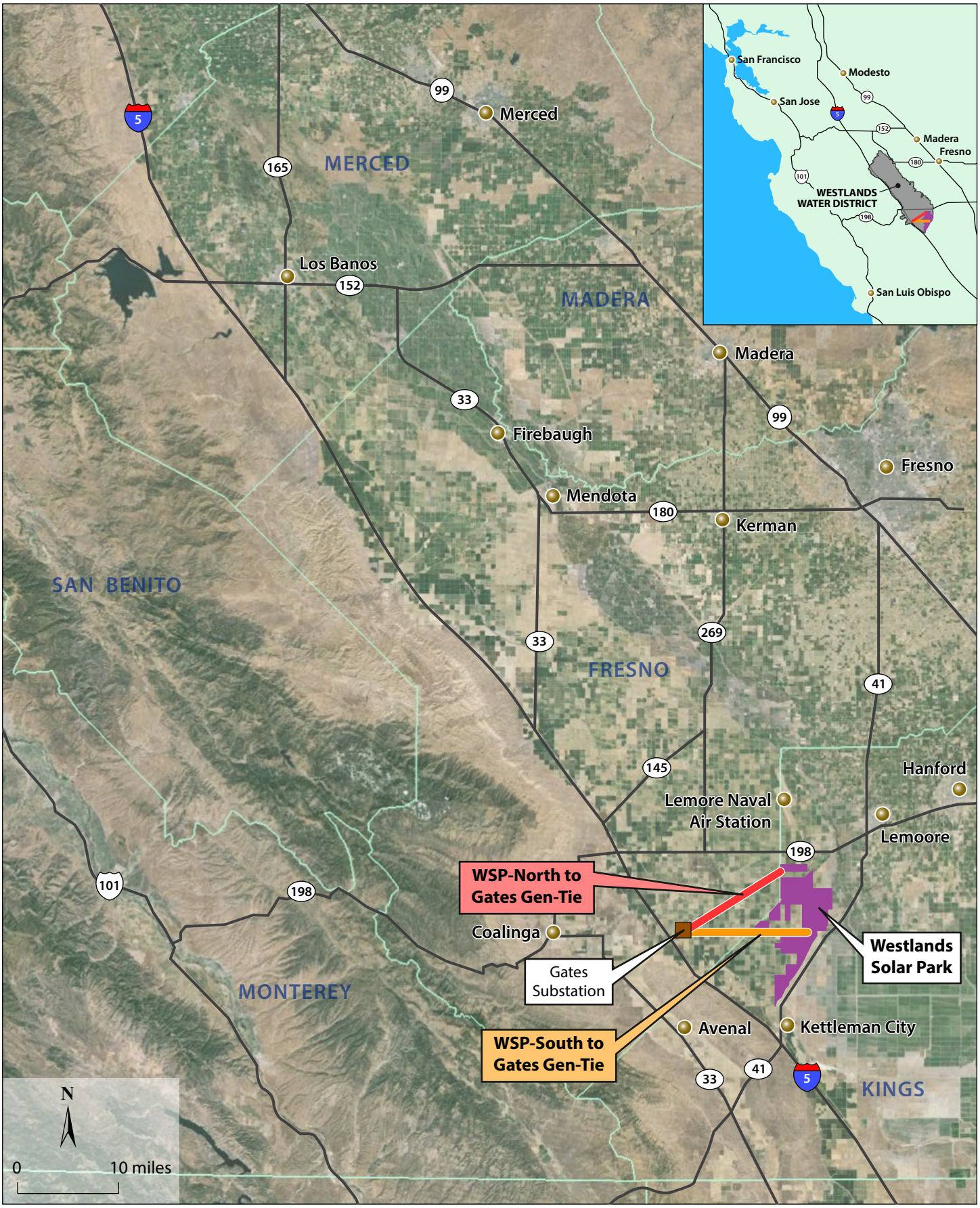
3. Contact Person and Phone Number

Kiti Buelna-Campbell, Senior Resources Engineer
(559) 224-1523

4. Project Location

Westlands Solar Park Master Plan

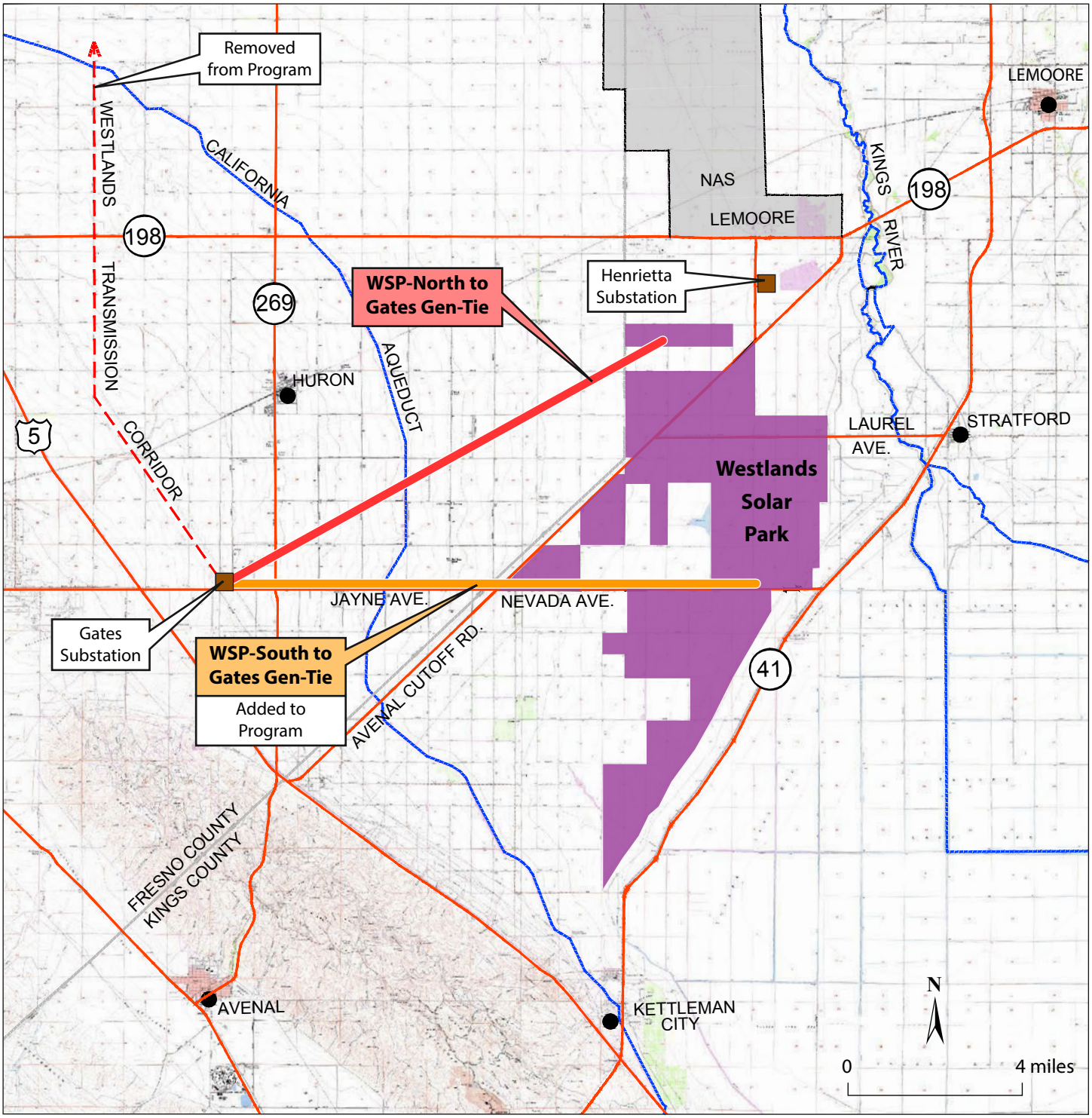
The approximately 21,000-acre Westlands Solar Park (WSP) is located in west-central Kings County and is generally bounded by State Route 198 on the north, State Route 41 on the southeast, and the Fresno County line on the west. The WSP plan area consists almost entirely of agricultural land. There are no dwellings or agricultural buildings within the plan area. County roads that traverse the plan area include Avenal Cutoff Road, Laurel Avenue, and Nevada Avenue. Two high voltage transmission corridors pass through the northwest corner of the plan area in a northeast-southwest direction. A natural gas transmission pipeline traverses the WSP plan area in a northeast-southwest direction running parallel and southeast of Avenal Cutoff Road. A secondary pipeline branches off the main pipeline at Laurel Avenue and extends east along the south side of Laurel Avenue to Stratford.



Base map: Google Earth, 2016

Regional Location

Figure 1



WSP Vicinity

Figure 2

WSP Gen-Tie Corridors Plan

WSP-South to Gates Gen-Tie Corridor – This 350-foot wide corridor is planned to accommodate up to two parallel 230-kV double circuit transmission lines. The gen-tie corridor would run parallel and adjacent to the north side of Nevada Avenue (Kings County) and Jayne Avenue (Fresno County), for a distance of approximately 11.5 miles from the WSP plan area to the Gates Substation.

WSP-North to Gates Gen-Tie Corridor – This 350-foot wide corridor is planned to accommodate up to two parallel 230-kV double circuit transmission lines. The gen-tie corridor would run parallel and adjacent to the existing 230-kV Henrietta-Gates transmission line, for a distance of approximately 11.5 miles from the northern portion of the WSP plan area to the Gates Substation.

5. Lead Agency and Project Sponsor Names and Addresses

Lead Agency
Westlands Water District
P.O. Box 6056
3130 N. Fresno Street
Fresno, CA 93703-6056

And

Project Sponsor
Westside Holdings LLC
4125 W. Noble Avenue, #310
Visalia, CA 93277

6. General Plan

The 2035 Kings County General Plan categorizes all of the lands within the WSP plan area as "Agriculture Open Space." The Land Use Element of the General Plan designates the lands within the plan area as either "General Agriculture – 40 Acre (South County)" or "Exclusive Agriculture – 40 acre." General Plan "Land Use Objective B7.1" states: "Allow compatible Open Space and Public uses of land within the Agriculture Open Space area of the County." GP "Land Use Policy B7.1.2" provides: "Power generation facilities for commercial markets shall be allowed and regulated through the Conditional Use Permit approval process, and include thermal, wind, and solar photovoltaic electrical generating facilities that produce power."

The WSP plan area consists entirely of unincorporated territory, and no portion of the plan area lies within the Primary or Secondary Sphere of Influence of an incorporated City or within a Community District.

The Naval Air Station (NAS) Lemoore is located to the north of the WSP plan area and the majority of the plan area lies within the Military Influence Area (MIA) of NAS Lemoore. The northern portion of the WSP plan area is subject to NAS Height Restriction Zones "D" and "G" where maximum allowable structure heights are 500 feet in each zone. The County General Plan's Exclusive Agriculture land use designation corresponds to lands subject to military aircraft noise levels of 70 dB CNEL or greater, and the applicable General Plan policy would limit or discourage land uses that would increase noise and safety risks to inhabitants. There are no other restrictions on WSP land use associated with NAS Lemoore.

7. Zoning

The majority of the WSP plan area is zoned "AG-40 (General Agriculture – 40 Acre Min.)" on the Zone Plan of Kings County, and the lands located north of Kansas Avenue are zoned "AX (Exclusive Agriculture)." Both zoning districts permit solar photovoltaic electrical generating facilities as a conditional use.

8. Description of Project

Summary of Changes to the Original Project

The plans for the Westlands Solar Park and related transmission projects have been modified during the several years since the original NOP was issued in March 2013. These changes are summarized below.

a. Westlands Solar Park Master Plan – Some of the land areas included in the WSP Master Plan as described in the original NOP have been removed from the Master Plan Area. The lands removed consist of properties in the northern and south-central portions of the plan area. As a result, the overall land area included in the WSP Master Plan has been reduced from approximately 24,000 acres to approximately 21,000 acres, and the corresponding estimate of total generating capacity has been reduced from approximately 2,400 MW to approximately 2,000 MW, based on assumed development intensity of PV solar facilities of about 10 gross acres per MW. No new lands have been added to the plan area as described in the original NOP.

b. Westlands Transmission Plan – The transmission plan described in the original NOP has been modified in several ways, as follows:

   i. Westlands Transmission Corridor – The initial concept for this corridor was to have it include two segments that would mainly follow new alignments northward through the interior of Westlands Water District. The first segment would commence at the Gates Substation and diverge from the existing 230-kV transmission line (along I-5) near SR-198 east of Harris Ranch and head directly north to a point southwest of the Helm Substation. This 26-mile first segment from Gates to Helm was intended to be a joint transmission corridor to be shared with the Gates to Gregg corridor (described below). The second segment was planned to branch off at the Helm junction and head northwestward for about 20 miles to rejoin the I-5 corridor alignment which would then continue northwest parallel to the existing 230-kV transmission lines for a final 40 miles to the Los Banos Substation on SR-152 near Santa Nella. With the removal of the Gates to Gregg corridor from the Transmission Corridors Plan, the Westlands interior route lost one of its primary purposes as dual function corridor.

   ii. Gates to Gregg Corridor – This new transmission corridor would connect the Gates Substation with the Gregg Substation located just north of Fresno. The southern 26-mile segment of this corridor was to be shared with the Westlands Transmission Corridor, as described above. Subsequently, PG&E initiated the separate Central Valley Power Connect (CVPC) project to construct a new transmission line between the Gates and Gregg substations. As such, the Gates to Gregg transmission element of the Westlands Transmission Plan became redundant and was therefore eliminated as part of the proposed project to be evaluated in this EIR.

   Subsequent to removal of the Gates to Gregg corridor from the Westlands Transmission Plan, the original interior transmission route lost its primary beneficial attribute of providing for a joint transmission corridor with the Gates to Gregg corridor in the southern segment. Accordingly, a new preferred route for the Westlands Transmission Corridor was identified along the west side of the valley, with the transmission corridor running parallel and adjacent

to existing transmission lines near I-5. Subsequent to the identification of the west-side corridor, a separate interconnection application was filed with the federal Western Area Power Administration (WAPA or Western) to construct a new transmission line along the west side of the valley between the Gates Substation and the Dos Amigos Pumping Plant, and potentially further on to the Los Banos Substation. That transmission corridor will be the subject of a separate project-specific EIS/EIR. Since that joint NEPA/CEQA document will provide full project-level environmental review for a transmission line along the west side of the valley, the programmatic review of a westside transmission corridor that was originally planned in this EIR became redundant and was therefore eliminated as part of the proposed project to be evaluated in this EIR.

iii. Henrietta-Gates Transmission Upgrades – Under the original transmission plan, the renewable energy generated at WSP was to be conveyed to the Gates Substation solely by an 11-mile transmission line running parallel and adjacent to the existing 230-kV Henrietta-Gates transmission line. That transmission corridor is still part of the plan but has been renamed the "WSP-North to Gates Gen-Tie."

iv. WSP-South to Gates Gen-Tie Corridor – This 11.5 mile transmission corridor has been added to the plan to serve the central and southern portions of the WSP plan area. This gen-tie corridor is described in further detail below.

Description of Current Project

The overall project covered by this EIR includes two main elements, consisting of: 1) the Westlands Solar Park ("WSP") Master Plan, which is an overall plan of development for solar generating facilities within WSP; and 2) the WSP Gen-Tie Corridors Plan These project elements, which are described in further detail below, will receive program-level environmental review in the EIR.

Westlands Solar Park (WSP) Master Plan

The WSP Master Plan is intended to serve as the planning framework for a series of utility-scale solar photovoltaic (PV) energy generating facilities on about 21,000 acres in west-central Kings County, generally located south of SR-198, west of SR-41 and the Kings River, and east of the Fresno County Line. The combined generating capacity of WSP solar projects is estimated to be 2,000 MW, although the final power output could increase with improved solar PV module efficiency over the course of the WSP buildout period. The solar PV projects developed within WSP would have varying generating capacities, with the power output from individual solar facilities ranging up to about 250 MW. The installation of solar generating facilities is planned to occur incrementally over an approximately 12-year buildout period extending to about 2030. The rate of solar project installation is anticipated to range from about 20 to 250 MW per year, with the installation rate averaging about 167 MW per year over the 12-year buildout period. The WSP generating facilities would receive program-level review in the EIR.

WSP Gen-Tie Corridors Plan

The Gen-Tie Corridors Plan sets forth the planned routes for the two gen-tie lines that would deliver WSP-generated electricity to the Gates Substation where it would be transferred to the State electrical grid, as described below.

a. WSP-South to Gates Gen-Tie Corridor – This planned 230-kV gen-tie corridor would run parallel and adjacent to the Nevada-Jayne Avenue roadway right-of-way, commencing at a planned substation on Nevada Avenue near its junction with the 25th Avenue alignment and running westward along the north side of the roadway for 11.5 miles to the Gates Substation. This gen-tie corridor would serve as the first of two WSP gen-ties providing delivery of solar power from the

WSP to the Gates Substation. An optional configuration under consideration would consist of two parallel 230-kV gen-ties in this alignment, as an alternative to the northern gen-tie corridor described below. To accommodate the two parallel gen-tie lines within this southern gen-tie corridor, the corridor is planned to be 350-feet wide.

b. WSP-North to Gates Gen-Tie Corridor – This second planned 230-kV transmission corridor would run parallel and adjacent to the existing 230-kV Henrietta-Gates transmission line, commencing at a planned substation in the northern portion of WSP, and running southwestward for 11.5 miles to the Gates Substation. As mentioned above, this northern gen-tie alignment may not be pursued if it is ultimately determined that is it would be preferable to add a second parallel gen-tie line along the Nevada-Jayne Avenue alignment described above. Alternatively, it is possible that this corridor may include two parallel 230-kV gen-tie lines. To accommodate the two parallel gen-tie lines, this corridor is also planned to be 350-feet wide.

Project Goals and Objectives

The goals and objectives of the Westlands Solar Park Master Plan and the WSP Gen-Tie Corridors Plan are as follows:

Overall Goals

The Westlands Solar Park Master Plan is intended to fulfill the following goals of the Project:

1) To provide an overall plan to guide and facilitate the beneficial reuse of drainage-impaired lands through development of renewable energy generation in the Westlands Competitive Renewable Energy Zone (CREZ).

2) To establish the preferred transmission gen-tie corridors to convey WSP-generated renewable energy to the statewide electricity market. Establishment of these routes would facilitate deliveries of renewable energy generation from drainage-impaired lands of the Westlands Solar Park to the state electrical grid.

Project Objectives of the WSP Master Plan

- Generate approximately 2,000 megawatts of clean, renewable electrical power utilizing solar photovoltaic (PV) technology and deliver the electrical output to the State's electrical grid. (The estimated overall generating capacity for WSP could increase with improvements to solar PV module efficiency during the course of the buildout period for WSP.)
- Contribute to the solution of area-wide agricultural drainage problems by retiring all of the lands within the WSP plan area and providing productive reuse of those lands for renewable energy production as an alternative to irrigated agriculture.
- Provide for the economically viable and environmentally beneficial reuse of the WSP plan area's physically impaired agricultural soils.
- Contribute to the reduction in overdraft of the aquifer for supplemental irrigation.
- Reduce cumulative salt loading to the groundwater resource.
- Constructively address the frequent shortage of surface water deliveries by removing the least productive farmland from irrigation by imported water, and by facilitating the redirection of scarce surface water allocations from the WSP plan area to more productive agricultural land within Westlands Water District that is not physically impaired by saline soils, high groundwater, or high selenium or other mineral concentrations. (This applies only to the

privately-owned western half of the WSP plan area. The WWD-owned lands in the eastern half of the WSP plan area have already been retired from irrigated agriculture.)

- Provide utility-scale power generation on physically-impaired farmland in order to reduce pressure for renewable energy development on prime agricultural soils elsewhere.
- Provide for development of utility-scale solar generation facilities on highly disturbed lands which provide minimal habitat value for wildlife.
- Provide a low-impact alternative location for the siting of utility-scale renewable energy development that might otherwise occur on lands with high habitat value for protected wildlife species (such as the Mojave Desert).
- Provide utility-scale solar generation in a location that is already served by high-voltage transmission lines.
- Help implement the State's goal of increased electrical generation to 50 percent with renewable resources by 2030 under California's Renewables Portfolio Standard (RPS).
- Help implement the California Renewable Energy Transmission Initiative (RETI) by providing for the development of up to 5,000 MW of the solar resource within the Westlands CREZ. (It is noted that the Westlands CREZ received the highest state-wide environmental ranking among all CREZs designated through the RETI process.)
- Contribute to overall reduction in greenhouse gas emissions by generating electricity that is not based on the combustion of fossil fuel, pursuant to The California Global Warming Solutions Act (AB 32), as extended and supplemented with SB 32 in 2016.
- Create new employment opportunities for local residents.
- Positively contribute to the local economy through stimulation of economic activity such as creation of secondary multiplier employment and the purchase of materials and services.
- Provide community benefits through increased property tax and sales tax revenues.

Project Objectives of the Gen-Tie Corridors

- Provide delivery of renewable solar power from the Westlands Solar Park to the State's electrical grid while minimizing impacts to the environment.

Purpose of the EIR on the WSP Master Plan and Gen-Tie Corridors Plan

The purpose and function of the Westlands Solar Park Master Plan and Gen-Tie Corridors Plan EIR is to provide program-level CEQA review and clearance for the following actions by the Westlands Water District Board of Directors:

- Adoption of the Westlands Solar Park Master Plan as the policy and planning framework for incremental development of solar PV generating facilities within the WSP plan area.
- Adoption of the WSP Gen-Tie Corridors Plan for delivery of WSP renewable solar generation to the State electrical grid at the Gates Substation.

9. Surrounding Land Uses and Setting

WSP Plan Area – The lands of the WSP plan area and surrounding areas consist almost entirely of cultivated agricultural land. The WSP site includes no residential or non-residential structures. The Shannon Ranch complex is located just off-site to the west at the intersection of Avenal Cutoff Road and Gale Avenue. The ranch complex consists of 20 single-family units of worker housing, a ranch office, a machine shop, various other outbuildings and infrastructure facilities, and an airstrip. The

remaining lands surrounding the WSP site are sparsely settled. Apart from the Shannon Ranch described above, there are a total of 6 dwellings located within one mile of the project boundary, two of which are located on the south side of Nevada Avenue at the Stone Land Company Ranch.

WSP-South to Gates Gen-Tie Corridor – The 11.5-mile long south gen-tie corridor follows the north side of Nevada and Jayne Avenues along the edges of lands in active agricultural cultivation. The gen-tie corridor passes near two rural dwellings on the south side of Nevada Avenue, and a series of 8 rural dwellings on the south side of Jayne Avenue. The gen-tie corridor also passes around a cold storage facility on the north side of Jayne Avenue before crossing over the California Aqueduct and State Route 269 on its approach to the Gates Substation.

WSP-North to Gates Gen-Tie Corridor – The approximately 11.5-mile long north gen-tie corridor commences from the northern portion of the WSP plan area and heads southwestward along the south side the existing Henrietta-Gates 230-kV transmission line. The corridor passes through agricultural fields and orchards, crossing the California Aqueduct and then Lassen Avenue/SR-269 en route to the Gates Substation. There are 10 rural dwellings within one mile of the north gen-tie corridor, the nearest of which is 0.3 miles from the corridor.

10. Actions and Approvals by the Lead Agency and Other Public Agencies

This EIR is intended to provide program-level CEQA review for agencies with jurisdiction with respect to the Westlands Solar Park and/or the WSP Gen-Tie Corridors. These agencies and their approval or coordination actions are listed below.

Westlands Water District

- Adoption of WSP Master Plan and WSP Gen-Tie Corridors Plan – The certification of this EIR will serve as CEQA compliance for WWD Board of Directors' adoption of the Westlands Solar Park Master Plan and WSP Gen-Tie Corridors Plan as District planning policy.

County of Kings

Individual solar projects proposed within WSP would be subject to the several discretionary approvals from Kings County, as listed below. Kings County decision-makers may utilize the program-level environmental review of this EIR in preparing second-tier project-specific environmental documents on discretionary approvals for individual solar projects proposed within the Westlands Solar Park Master Plan area, and associated gen-tie projects.

- Conditional Use Permits (CUPs) for individual solar development projects proposed within WSP, and for gen-tie segments located within Kings County.
- Vesting Tentative Parcel Maps (or Lot Line Adjustments) to create land divisions corresponding to the boundaries of the individual solar projects, as necessary.
- Encroachment Permits for work in County road rights-of-way, and for utility crossings over or under County roads.

Western Area Power Administration (Western or WAPA)

It is anticipated that Western will serve as the federal lead agency in sponsoring the separate Westside Transmission Project (Gates to Dos Amigos/Los Banos). Western would be the federal Lead Agency for preparation of the Environmental Impact Statement (EIS) portion of the joint EIS/EIR under the National Environmental Policy Act (NEPA). The information and analysis contained in this EIR with respect to the WSP and associated gen-ties may be relied upon in preparing the joint EIR/EIS on the Westside Transmission Project.

California Public Utilities Commission (CPUC)

It is anticipated that the WSP gen-tie projects will be privately constructed and operated, and thus will not be subject to the approval jurisdiction of the CPUC. However, it is possible that some or all of the WSP gen-tie projects, substations, and substation upgrades (and possible switching stations) may ultimately be constructed by or for PG&E, which is subject to the regulatory authority of the CPUC. The CPUC would issue Permits to Construct (PTCs), or Certificates of Public Convenience and Necessity (CPCNs) (the latter are required for any transmission projects requesting ratepayer funding). The CPUC may utilize the information in this EIR to inform their decisions and approvals.

It is noted that the California Energy Commission (CEC) has no jurisdiction over the WSP solar PV projects. The CEC has no jurisdiction over solar PV projects, and only has jurisdiction over concentrating solar (thermal solar) projects over 50 MW. The CEC also does not have jurisdiction over permitting of transmission projects. The CEC has authority to designate Transmission Corridor Zones under California law, which is a voluntary program for prospective transmission corridor proponents. A Transmission Corridor Zone designation from CEC is not required for the construction of a transmission line.

Other Agencies

In addition, the information in this EIR may be used by the following responsible and trustee State, regional, and local agencies for their separate permit and review processes in conjunction with subsequent approvals of individual solar generating facilities proposed within the WSP, and associated gen-tie projects.

- County of Fresno: 1) Approval of unclassified conditional use permits for gen-tie segments located in Fresno County; 2) Encroachment permits for work in County road rights-of-way; 3) Building permits and other ministerial permits (does not apply to upgrades within existing substation fence lines). (Note: Public utility projects that are subject to approval by CPUC are exempt from local discretionary approval under CPUC General Order 131-D, although coordination with local jurisdictions regarding consistency with plans and policies is required. Thus, if one or both of the gen-tie segments located within Fresno County are subject to CPUC jurisdiction, the County would review the WSP gen-tie projects for consistency with County plans and policies. However, it is anticipated that the WSP gen-tie projects will be privately constructed and operated, and thus will not be subject to the approval jurisdiction of the CPUC, but will instead be subject to local land use approval authority.)

- San Joaquin Valley Air Pollution Control District (SJVAPCD): 1) Indirect Source Review (ISR) under Air District Rule 9510; 2) Approval of construction Dust Control Plans under Air District Regulation VIII; 3) Compliance with other Air District rules and regulations (e.g., Rule 4601 for asphalt paving; Rule 2010 permit to operate for equipment greater than 50 horsepower resulting in emissions; Rule 2280 registration for portable equipment resulting in emissions).

- Regional Water Quality Control Board – Central Valley Region (CVRWQCB): 1) Administration of General Permit for Storm Water Discharges Related to Construction Activities under the National Pollutant Discharge Elimination System (NPDES), including review and approval of Storm Water Pollution Prevention Plans (SWPPPs); 2) Water quality certification (or waiver) for any planned work in 'Waters of the State' under the State Porter-Cologne Water Quality Control Act and/or 'Waters of the U.S.' under Section 401 of the federal Clean Water Act.

- California Department of Transportation (Caltrans): 1) Encroachment permits for utility crossings over state highways; 2) Oversize/overweight permit and Traffic Control Plan.

- California Department of Fish and Wildlife (CDFW): 1) Streambed Alteration Agreement under Sections 1601-1602 of the California Fish and Game Code for any work in or alteration of a creek or other water body; 2) Coordination and permitting under the California Endangered Species Act for any potential impacts to State-protected species.

- California Department of Water Resources (DWR): 1) Encroachment permits for gen-tie crossings over the California Aqueduct.

- US Army Corps of Engineers (USACE): 1) Authorization for any work in or alteration of a federally-designated wetland or 'Waters of the U.S.' under Section 404 of the federal Clean Water Act.

- US Fish and Wildlife Service (USFWS): 1) Coordination and permitting under the federal Endangered Species Act for any potential impacts to federally-protected species; 2) Coordination with the U.S. Army Corps of Engineers in connection with any potential Section 404 permits under the federal Clean Water Act.

11. Probable Environmental Effects

The EIR will address all checklist items contained in Appendix G of the CEQA Guidelines. The following is preliminary list of environmental topics to be addressed in the EIR.

- Aesthetics
- Agricultural Resources
- Air Quality (and Greenhouse Gas Emissions)
- Biological Resources
- Cultural Resources (and Tribal Cultural Resources)
- Geology and Soils (and Mineral Resources)
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise
- Paleontological Resources
- Public Services
- Transportation and Traffic
- Utilities and Service Systems

Cumulative Impacts

Each topical EIR section listed above will include an analysis of cumulative impacts.

Other Checklist Items

Those checklist items that are determined to have negligible or no impact associated with them will be briefly discussed in an EIR chapter entitled "Effects Found Not to Be Significant" as provided under Section 15128 of the CEQA Guidelines. The non-significant impact categories are expected to include: Forestry Resources; Population and Housing; and Recreation.

Other CEQA-Mandated Analyses

In addition to the topical impact discussions listed above, the EIR will also address the summary analyses required under CEQA, including the following: Alternatives to the Proposed Action; Growth-Inducing Effects; Significant and Unavoidable Impacts; Significant Irreversible Environmental Changes; and Energy Conservation.

STATE OF CALIFORNIA – CALIFORNIA NATURAL RESOURCES AGENCY
EDMUND G. BROWN JR., *Governor*

DEPARTMENT OF WATER RESOURCES
1416 NINTH STREET, P.O. BOX 942836
SACRAMENTO, CA 94236-0001
(916) 653-5791

September 28, 2017

Kiti Buelna-Campbell
Westlands Water District
3130 N. Fresno Street
P.O. Box 6056
Fresno, CA 93703

Notice of Preparation (NOP) for Westlands Solar Park (WSP) Master Plan and WSP Gen-Tie Corridors Plan draft Environmental Impact Report (EIR); near Kettleman City, in Kings County and Fresno County, California Aqueduct, near Mileposts 159.24 and 161.60, San Luis Field Division.

Dear Ms. Buelna-Campbell,

Thank you for the opportunity to review and comment on the NOP for WSP Master Plan and WSP Gen-Tie Corridors Plan draft EIR. The NOP describes the proposal of: 1) WSP Master Plan consisting of a 21,000-acre plan area to accommodate solar photovoltaic generating facilities generating a total generating capacity of approximately 2,000 MW with construction to be phased over 12 years; 2) WSP Gen-Tie Corridors Plan – including two gen-tie corridors: a) WSP-South to Gates Gen-Tie – an 11.5-mile gen-tie corridor extending from the WSP plan area in a 350-foot corridor along Nevada-Gates Avenues to the Gate Substation; b) WSP-North of Gates Gen-Tie – an 11.5-mile gen-tie corridor running parallel and adjacent to the existing 230-kV Henrietta-Gates transmission line from the northern portion of the WSP plan area southwestward to the Gates Substation.

Department of Water Resources (DWR) has comments regarding the Project. The following items shall be addressed in the next environmental review:

1. Any construction within Department of Water Resources (DWR) right-of-way will require an Encroachment Permit from DWR.

2. Overhead Electrical and Communication Utilities Crossings over the California Aqueduct must comply with DWR regulations.

Information regarding regulations and forms for submitting an application for an encroachment permit to DWR can be found at:

http://www.water.ca.gov/engineering/Services/Real_Estate/Encroach_Rel/

Please provide DWR with a copy of any subsequent environmental documentation when it becomes available for public review. Any future correspondence relating to the above-mentioned concerns of DWR should be sent to:

California Department of Water Resources
Division of Operations and Maintenance
State Water Project Right-of-Way Management Section
Attn: Leroy Ellinghouse
1416 Ninth Street, Room 641-1
Sacramento, California 95814

If you have any questions, please contact Leroy Ellinghouse, Chief, State Water Project Right-of-Way Management Section, at (916) 653-7168 or Robert Martinez at (916) 654-8982.

Sincerely,

David M. Samson
Civil Engineering Services
Department of Water Resources

cc: State Clearinghouse
Office of Planning and Research
1400 10th Street
Sacramento, CA 95814

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Central Region
1234 East Shaw Avenue
Fresno, California 93710
www.wildlife.ca.gov

EDMUND G. BROWN JR., Governor
CHARLTON H. BONHAM, Director

September 27, 2017

Kita Buelna
Westlands Water District
3130 North Fresno Street
Post Office Box 6056
Fresno, California 93703

Subject: Revised Notice of Preparation (NOP) of a Draft Environmental Impact Report (EIR); Westlands Solar Park Master Plan and WSP Gen-Tie Corridors Plan; SCH No. 2013031043

Dear Ms. Buelna:

The California Department of Fish and Wildlife (Department) has reviewed the above NOP of a Draft EIR for the Westlands Solar Park Master Plan and WSP Gen-Tie Corridors Plan (Project) submitted by the Westlands Water District (District). Approval of the Project would serve as the planning framework for a series of utility-scale solar photovoltaic (PV) energy generating facilities (Westlands Solar Park, WSP) for a combined capacity of 2,000-mega-watts on approximately 21,000 acres of land that will be phased over a period of 12 years and construction of new transmission lines; a) WSP-South to Gates Gen-Tie Corridor an 11.5-mile long and 350-foot wide gen-tie corridor extending from the central portion of the WSP plan area west along Nevada-Gates Avenues to the Gates Substation that would accommodate up to two parallel 230-kV double circuit transmission lines, and b) WSP-North to Gates Gen-Tie Corridor: an 11.5-mile long and 350-foot wide gen-tie corridor that runs parallel and adjacent to the existing 230-kilo-volt (kV) Henrietta-Gates transmission line from the northern portion of the WSP plan area extending southwestward to the Gates Substation that would accommodate up to two parallel 230-kV double circuit transmission lines. The Project site is generally bounded by State Route 198 to the north, State Route 41 to the southeast, and the Fresno County line to the west, within an unincorporated area of Kings and Fresno Counties, California.

It appears to the Department that the Revised NOP package is not complete and that perhaps multiple pages are missing. Based on the limited information the Department has available, the Department has the following general comments. Once the Draft EIR is circulated for review, the Department may have additional or more specific comments. It is the Department's understanding that the Project site is composed of agricultural land that is being retired from agricultural use due to drainage and soil chemical composition issues. However, these issues do not preclude the use of the Project site by special status species. The Department recommends the District include a thorough evaluation of species that have the potential to be impacts by any phase of the Project development and include specific avoidance, minimization, and mitigation measures for each species that is identified. Please refer to the species list provided in the General Comments below.

Page 7 of the NOP states that each phase proposed for development will receive program-level environmental review in the EIR. The Department assumes this means that each proposed development phase that makes up the Project will have additional California Environmental Quality Act (CEQA) documents prepared that include development-specific analysis and avoidance, minimization, and mitigation measures. The Department recommends the District define "program-level" review in the Draft EIR.

Department Jurisdiction

California Environmental Quality Act (CEQA) Authority: The Department is a Trustee Agency for fish and wildlife resources with the responsibility under CEQA for commenting on projects that could impact fish and wildlife resources. In this role, the Department is responsible for providing, as available, biological expertise to review and comment on environmental documents and impacts arising from project activities. Pursuant to Fish and Game Code Section 1802, the Department has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species.

California Endangered Species Act (CESA) Authority: The Department has regulatory authority over projects that could result in the "take" of any species listed by the State as threatened or endangered pursuant to CESA. If the Project could result in the take of any species listed as threatened or endangered under CESA, the Department may need to issue an Incidental Take Permit (ITP) for the Project. CEQA requires a Mandatory Finding of Significance if a project is likely to substantially impact threatened or endangered species (Sections 21001{c}, 21083, Guidelines sections 15380, 15064, 15065). Impacts must be avoided or mitigated to less than significant levels unless the CEQA Lead Agency makes and supports a Statement of Overriding Consideration (SOC). The CEQA Lead Agency's SOC does not eliminate the Project proponent's obligation to comply with Fish and Game Code Section 2080.

Lake and Streambed Alteration Agreement (LSAA): The Department also has regulatory authority with regard to activities occurring in streams and/or lakes that could adversely affect any fish or wildlife resource, pursuant to Fish and Game Code Section 1600 *et seq*. If the proposed Project would substantially divert water and/or alter the bed, bank, or channel of a lake and/or stream or associated riparian vegetation, an LSAA Notification would be warranted. The Department is required to comply with CEQA in the issuance or the renewal of an LSAA. Therefore, for efficiency in environmental compliance, the Department recommends that the CEQA document prepared for this Project describe and propose mitigation for any Project activities under the Department's regulatory authority under Fish and Game Code Section 1600 *et seq*. This would reduce the need for the Department to require extensive additional environmental review for an LSAA for this Project in the future. For additional information on notification requirements, please contact Department staff in the Lake and Streambed Alteration Program at (559) 243-4593.

Fully Protected Species: The Department has jurisdiction over fully protected species of birds, mammals, amphibians and reptiles, and fish pursuant to Fish and Game Code sections 3511, 4700, 5050, and 5515. Take of any fully protected species is prohibited and the Department cannot authorize their take.

Bird Protection: The Department has jurisdiction over actions which may result in the disturbance or destruction of active nest sites or the unauthorized take of birds. Sections of the Fish and Game Code that protect birds, their eggs and nests include sections 3503 (regarding unlawful take, possession or needless destruction of the nest or eggs of any bird), 3503.5 (regarding the take, possession or destruction of any birds-of-prey or their nests or eggs), and 3513 (regarding unlawful take of any migratory nongame bird).

Water Quality Protection: Pursuant to Fish and Game Code Section 5650, it is unlawful to deposit in, permit to pass into, or place where it can pass into a "Waters of the State" any substance or material deleterious to fish, plant life, or bird life. Additionally, Fish and Game Code Section 5652 prohibits the deposition of any cans, bottles, garbage, motor vehicle or parts thereof, or rubbish within 150 feet of the high water mark of the Waters of the State (or where they can pass in to any Waters of the State).

General Comments

Because of the size extent of the solar development and transmission line corridors, wildlife species have the potential to be impacted during implementation of the Project. The Department recommends that the District conduct a biological assessment to determine what habitat types, vegetation communities, streams, and wetlands and other waters exist within the entire Project footprint and in the Project vicinity. The biological assessment would provide a baseline on wildlife potentially impacted through construction, operation, maintenance, and decommissioning activities and provide avoidance, minimization, and mitigation measures to be included in the Draft EIR. The species listed in Table 1 below are known to occur in the Project site's vicinity.

Table 1 – Special Status Wildlife Species in the Project Vicinity

Common Name	Scientific Name	State Status	Federal Status
blunt-nosed leopard lizard	*Gambelia sila*	Threatened/Fully Protected	Threatened
Nelson's antelope squirrel	*Ammospermophilus nelsoni*	Threatened	
Swainson's hawk	*Buteo swainsoni*	Threatened	
San Joaquin kit fox	*Vulpes macrotis mutica*	Threatened	Endangered
Tipton kangaroo rat	*Dipodomys nitratoides nitratoides*	Endangered	Endangered
Western snowy plover	*Charadrius alexandrines nivosus*		Threatened
Giant garter snake	*Thamnophis gigas*	Threatened	Threatened
California least tern	*Sternula antillarum browni*	Endangered	Endangered
California Jewelflower	*Caulanthus californicus*	Endangered	Endangered
Kern mallow	*Eremalche parryi ssp. kernensis*	1B	Endangered
San Joaquin woollythreads	*Monolopia congdonii*	1B	Endangered
Burrowing owl	*Athene cunicularia*	SSC	
Tricolored blackbird	*Agelaius tricolor*	Candidate	

American badger	*Taxidea taxus*	SSC	
Tulare grasshopper mouse	*Onychomys torridus tularensis*	SSC	
Lemmon's jewelflower	*Caulanthus lemmonii*	1B	
Recurved larkspur	*Delphinium recurvatum*	1B	

1B=California Rare Plant Rank 1B; rare throughout their range with the majority of them endemic to California
SCC=State Species of Special Concern
Threatened/Endangered/Candidate=listing designation under either the State Endangered Species Act (CESA) or federal Endangered Species Act (ESA)

To ensure that potential Project impacts are adequately identified and addressed, the Department recommends the District require that additional development-specific biological assessments be conducted prior to approval of each development phase and subsequent species-specific surveys be conducted when findings during the biological assessments indicate that such surveys are warranted throughout the transmission line corridors and within the solar development area as necessary. Conduct species-specific surveys according to Department-accepted protocols, which can be found at the Department website at http://www.dfg.ca.gov/wildlife/nongame/survey_monitor.html. If the Department website does not contain a survey protocol for a particular species, the Department recommends the District require each facility proponent to submit a proposed protocol to the Department and/or the United States Fish and Wildlife Service (USFWS) for review and approval prior to implementation.

Conversion from agricultural lands to solar facilities has the potential to displace wildlife species and impact foraging opportunities. In perpetuity, habitat conservation should be included as a mitigation measure in the Draft EIR or other CEQA documents prepared for each development phase of the Project where the conversion of agricultural lands to solar results in potentially significant impacts. In many cases, conservation of agricultural land would be appropriate.

The Department recommends including the following general mitigation measures in the Draft EIR and any subsequent CEQA documents prepared for individual phases.

1. Restrict outdoor lighting except as necessary for safety.

2. Require that all lights be shielded, pointed downward, and directed away from adjacent habitat.

3. Require motion sensor-type nighttime lighting so that the lights do not stay on constantly and interfere with nocturnal wildlife activities.

4. Install perimeter fencing so that the bottom of the fence is 5 to 7 inches above the ground surface and knuckled under to create a smooth edge to allow for unimpeded movement of wildlife through the project sites. This will help avoid wildlife connectivity issues posed by this large scale solar Project.

5. Require that all vertical pipes associated with solar mounts or chain-link fencing be capped at the time of installation to prevent entrapment and death of birds.

6. Prohibit the use of rodenticides. If rodenticide use is allowed, obtain an ITP from the Department for listed species such as San Joaquin kit fox (*Vulpes macrotic mutica*, SJKF), Swainson's hawk (*Buteo swainsoni*, SWHA), and any other State-listed species known to occur in the Project site's vicinity before starting rodenticide use.

Thank you for the opportunity to provide input on the NOP for this renewable energy project. If you have any questions regarding these comments, please contact Lisa Gymer, Senior Environmental Scientist Specialist, at the address on this letterhead, by telephone at (559) 243-4014, extension 238, or by electronic mail at lisa.gymer@wildlife.ca.gov.

Sincerely,

Julie A. Vance
Regional Manager

cc: United States Fish and Wildlife Service
Sacramento Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825

Debra Mahnke
Regional Water Quality Control Board
1685 E Street, Suite 100
Fresno, California 93706

State Clearinghouse
Post Office Box 3044
Sacramento, California 95812-3044

ec: California Department of Fish and Wildlife
Annee Ferranti, Central Region
Lisa Gymer, Central Region

September 18, 2017

Kiti Buelna-Campbell
Westlands Water District
3130 N. Fresno Street
Fresno, CA 93703-6056

Project: Revised Notice of Preparation (NOP) of a Draft Environmental Impact Report (EIR) for the Westlands Solar Park (WSP) Master Plan and WSP Gen-Tie Corridors Plan

District CEQA Reference No: 20170993

Dear Ms. Buelna-Campbell:

The San Joaquin Valley Unified Air Pollution Control District (District) has reviewed the Revised Notice of Preparation (NOP) for the Westlands Solar Park (WSP) Master Plan and WSP Gen-Tie Corridors Plan Project. The WSP Master Plan is intended to serve as the planning framework for a series of utility-scale solar photovoltaic (PV) generating facilities on approximately 21,000 acres generating approximately 2,000 megawatts (MW) and the WSP Gen-Tie Corridors Plan consists of setting forth planned routes for two gen-tie lines that would deliver WSP generated electricity to the Gates Substation where it would be transferred to the State electrical grid (Project). The Project is located south of State Route 198, west of State Route 41 and the Kings River in west-central Kings County. The District offers the following comments:

Emissions Analysis

1) At the federal level for the National Ambient Air Quality Standards (NAAQS), the District is currently designated as extreme nonattainment for the 8-hour ozone standards; nonattainment for the PM2.5 standards; and attainment for the 1-Hour ozone, PM10 and CO standards. At the state level, the District is currently designated as nonattainment for the 8-hour ozone, PM10, and PM2.5 California Ambient Air Quality Standards (CAAQS). The District recommends that the Air Quality section of the Environmental Impact Report (EIR) include a discussion of the following impacts:

a) **Criteria Pollutants:** Project related criteria pollutant emissions should be identified and quantified. The discussion should include existing and post-Project emissions.

i) Construction Emissions

Construction activities include: the transport of materials to the construction site; on-site land preparation and panel installation; off-site construction activities necessary for operation of the facility (new power lines, substation, etc.); and construction employee commute.

Equipment exhaust, as well as fugitive dust emissions should be quantified. Project related short-term (construction) impacts should be considered significant if, with the implementation of mitigation measures, emissions exceed 10 tons per year of oxides of nitrogen (NOx), 10 tons per year of reactive organic gases (ROG), or 15 tons per year particulate matter of 10 microns or less in size (PM10).

- *Recommended Mitigation:* To reduce impacts from construction related exhaust emissions, the District recommends feasible mitigation for the Project to utilize off-road construction fleets that can achieve fleet average emissions equal to or cleaner than the Tier III emission standards, as set forth in §2423 of Title 13 of the California Code of Regulations, and Part 89 of Title 40 Code of Federal Regulations. This can be achieved through any combination of uncontrolled engines and engines complying with Tier III and above engine standards.

ii) Operational Emissions

Operational activities include: the transport of water to the site, if applicable; panel cleaning; vehicles and equipment used on-site; deliveries to the site; and employee commute.

Emissions from permitted (stationary) sources and non-permitted (mobile) sources should be analyzed separately. Project related long-term (operational) impacts should be considered significant if, with the implementation of mitigation measures, emissions exceed 10 tons per year of oxides of nitrogen (NOx), 10 tons per year of reactive organic gases (ROG), or 15 tons per year particulate matter of 10 microns or less in size (PM10).

- *Recommended Mitigation:* Project related impacts on air quality can be reduced through incorporation of design elements, for example, that increase energy efficiency, reduce vehicle miles traveled, and reduce construction exhaust related emissions. However, design elements and compliance with District rules and regulations may not be sufficient to

reduce project related impacts on air quality to a less than significant level. Another example of a feasible mitigation measure is the mitigation of project emissions through a Voluntary Emission Reduction Agreement (VERA). The VERA is an instrument by which the project proponent provides monies to the District, which is used by the District to fund emission reduction projects that achieve the reductions required by the lead agency. District staff is available to meet with project proponents to discuss a VERA for specific projects. For more information, or questions concerning this topic, please call District Staff at (559) 230-6000.

iii) Recommended Model: Project related criteria pollutant emissions should be identified and quantified. Emissions analysis should be performed using CalEEMod (**Cal**ifornia **E**mission **E**stimator **Mod**el), which uses the most recent approved version of relevant Air Resources Board (ARB) emissions models and emission factors. CalEEMod is available to the public and can be downloaded from the CalEEMod website at: www.caleemod.com.

b) **Nuisance Odors:** The project should be evaluated to determine the likelihood that the project would result in nuisance odors. Nuisance orders are subjective, thus the District has not established thresholds of significance for nuisance odors. Nuisance odors may be assessed qualitatively taking into consideration of project design elements and proximity to off-site receptors that potentially would be exposed objectionable odors.

c) **Health Impacts:** Project related health impacts should be evaluated to determine if emissions of toxic air contaminants (TAC) will pose a significant health risk to nearby sensitive receptors. TACs are defined as air pollutants that which may cause or contribute to an increase in mortality or serious illness, or which may pose a hazard to human health. The most common source of TACs can be attributed to diesel exhaust fumes that are emitted from both stationary and mobile sources. Health impacts may require a detailed health risk assessment (HRA).

Prior to conducting an HRA, an applicant may perform a prioritization on all sources of emissions to determine if it is necessary to conduct an HRA. A prioritization is a screening tool used to identify projects that may have significant health impacts. If the project has a prioritization score of 1.0 or more, the project has the potential to exceed the District's significance threshold for health impacts of 20 in a million and an HRA should be performed.

If an HRA is to be performed, it is recommended that the project proponent contact the District to review the proposed modeling approach. The project would be considered to have a significant health risk if the HRA demonstrates that project related health impacts would exceed the District's significance threshold of 20 in a million.

More information on TACs, prioritizations and HRAs can be obtained by:

- E-mailing inquiries to: hramodeler@valleyair.org; or
- Visiting the District's website at:

  http://www.valleyair.org/busind/pto/Tox_Resources/AirQualityMonitoring.htm.

2) In addition to the discussions on potential impacts identified above, the District recommends the EIR also include the following discussions:

   a) A discussion of the methodology, model assumptions, inputs and results used in characterizing the project's impact on air quality. To comply with CEQA requirements for full disclosure, the District recommends that the modeling outputs be provided as appendices to the EIR. The District further recommends that the District be provided with an electronic copy of all input and output files for all modeling.

   b) A discussion of the components and phases of the project and the associated emission projections, including ongoing emissions from each previous phase.

   c) A discussion of project design elements and mitigation measures, including characterization of the effectiveness of each mitigation measure incorporated into the project.

   d) A discussion of whether the project would result in a cumulatively considerable net increase of any criteria pollutant or precursor for which the San Joaquin Valley Air Basin is in non-attainment. More information on the District's attainment status can be found online by visiting the District's website at: http://valleyair.org/aqinfo/attainment.htm.

District Rules and Regulations

3) Based on information provided, the proposed Project meets the applicability threshold within District Rule 9510 (Indirect Source Review) of 9,000 square feet of other land uses. Therefore, per Section 2.1 of the rule the District concludes that the proposed Project is subject to District Rule 9510.

   a) Any applicant subject to District Rule 9510 is required to submit an Air Impact Assessment (AIA) application to the District no later than applying for final discretionary approval, and to pay any applicable off-site mitigation fees.

   b) If approval of the subject Project constitutes the last discretionary approval by your agency, the District recommends that demonstration of compliance with District Rule 9510, including payment of all applicable fees be made a condition of Project approval. Information about how to comply with District Rule 9510 can be found online at: www.valleyair.org/ISR/ISRHome.htm.

4) The proposed Project may be subject to District rules and regulations including, but not limited to: Regulation VIII (Fugitive PM10 Prohibitions), Rule 4102 (Nuisance), Rule 4601 (Architectural Coatings), and Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations). The proposed Project may also require District permits. The applicant is strongly encouraged to contact the District prior to the start of construction to identify other District regulations that apply to this project and determine if an Authority to Construct (ATC) is required. District's Small Business Assistance (SBA) staff can be reached by phone at (559) 230-5888. A complete list of current District rules can be found online at: www.valleyair.org/rules/1ruleslist.htm.

5) The District recommends that a copy of the District's comments be provided to the project proponent.

District staff is available to meet with you and/or the applicant to further discuss the regulatory requirements that are associated with this project. If you have any questions or require further information, please call Sharla Yang at (559) 230-5934.

Sincerely,

Arnaud Marjollet
Director of Permit Services

Sharla Yang

For Brian Clements
Program Manager

AM: sy

James Chuang
Senior Environmental Specialist

Southern California Gas Company
Sempra Energy utilities
GT17E2
555 Fifth Street
Los Angeles, Ca. 90013
Tel: 213-244-5817
Fax: 323 518 2324

10/2/2017

Ms. Kiti Buelna-Campbell
Westlands Water District
3130 N. Fresno Street
P.O. Box 6056
Fresno, CA 93703-6056

Re: **Westlands Solar Park Master Plan and WSP Gen-Tie Corridors Plans**

Dear Ms. Campbell:

Southern California Gas Company (SoCalGas) appreciates the opportunity to review and respond to the Draft Environmental Impact Report (DEIR) for the Westlands Solar Park Master Plan and WSP Gen-Tie Corridors Plans. SoCalGas understands that the proposed project would involve development of the Westland Solar Park (WSP) Master Plan which would serve as the planning framework for a series of utility-scale solar PV energy generating facilities on approximately 21,000 acres in west-central Kings County. The proposed project would also include development of the WSP Gen-Tie Corridors Plan which would set forth planned routes for two gen-tie lines that would deliver WSP-generated electricity to the Gates Substation where it would be transferred to the State electrical grid. Both plans are analyzed at the programmatic level under the DEIR. We respectfully request that the following comments be incorporated in the administrative record for the DEIR:

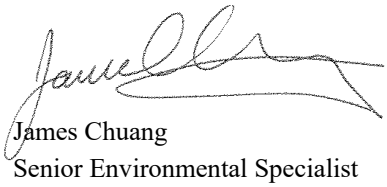
- SoCalGas has a 20-inch high pressure transmission pipeline that traverses the WSP area running parallel Avenal Cutoff Road and a 12-inch high pressure pipeline branching northbound from the transmission line approximately halfway between Laurel Avenue and Jackson Avenue.

- SoCalGas recommends that the project proponent call Underground Service Alert at 811 at least two business days prior to performing any excavation work for future activities evaluated under both proposed plans. Underground Service Alert will coordinate with SoCalGas and other Utility owners in the area to mark the locations of buried utility-owned lines.

- Should it be determined that any future development facilitated by the proposed plans may require SoCalGas to abandon and/or relocate or otherwise modify any portion of its existing natural gas lines, SoCalGas respectfully requests that the County and/or the project proponent coordinate with us by calling (800) 427-2000 for Non-residential to follow-up on this matter.

Once again, we appreciate the opportunity to comment on the DEIR. If you have any questions, please feel free to contact SoCalGas Environmental Review at Envreview@semprautilities.com or (213) 244-5817.

Sincerely,



James Chuang
Senior Environmental Specialist
Southern California Gas Company

Cc/ Jennifer Pezda, SoCalGas

September 22, 2017

Kiti Buelna-Campbell
Westlands Water District
PO Box 6056
Fresno, CA 93703-6056

Delivered via email to kcampbell@westlandswater.org

RE: **Revised Notice of Preparation – Draft Environmental Impact Report for Westlands Solar Park Master Plan and Westlands Solar Park Gen-Tie Corridors Plan**

Dear Ms. Campbell:

Thank you for the opportunity to respond to the revised notice of preparation (NOP) for the Draft Environmental Impact Report (EIR) being prepared for the Westlands Solar Park (WSP) Master Plan and WSP Gen-Tie Corridors Plan (Project). The EIR is intended to provide program-level CEQA review and clearance for the following actions by the Westlands Water District Board of Directors:

- Adoption of the Westlands Solar Park Master Plan as the policy and planning framework for the incremental development of solar photovoltaic (PV) generating facilities within the WSP plan area.

- Adoption of the Westlands Solar Park Gen-Tie Corridors Plan for delivery of WSP renewable solar generation to the State electrical grid at the Gates Substation.

These comments are submitted on behalf of Defenders of Wildlife (Defenders); a non-profit environmental organization with 1.2 million supporters nationally, including 170,000 in California. We previously provided comments relative to the March 2013 NOP for this project.

Defenders is dedicated to protecting all wild animals and plants in their natural communities. To that end, Defenders employs science, public education and participation, media, legislative advocacy, litigation, and proactive on-the-ground solutions in order to prevent the extinction of species, associated loss of biological diversity, and habitat alteration and destruction.

Defenders strongly supports the State of California's emission reduction and climate goals. The development of renewable energy is a critical component of efforts to reduce greenhouse gas emissions, avoid the worst consequences of global warming, and assist California in meeting its mandated emission reductions. We also support the development of renewable energy production in appropriate locations, with the application of sound impact avoidance, minimization and mitigation measures.

In meeting our renewable energy portfolio standard in California, we urge that renewable energy projects be located in environmentally suitable locations and designed in the most sustainable manner possible. Like any project, "Smart from the Start" planning is essential. Such projects should be sited in a manner that avoids impacts to our native wildlife, plants, limited water supplies, prime agricultural lands and well-being of local communities. Proximity to areas of electrical end-use should be emphasized to both maximize energy transmission efficiency and benefit local communities.

California Program Office
980 9th Street, Suite 1730
Sacramento, CA 95814
Telephone 916-313-5800
Fax 916-313-5812
www.defenders.org/california

The proposed Project includes the Westlands Solar Park (WSP) Master Plan and WSP Gen-Tie Corridors Plan. The WSP would be located in the unincorporated area of west-central Kings County and the gen-tie facilities would traverse portions of Kings and Fresno Counties. The components of the Project are as follows:

Westlands Solar Park Master Plan

The WSP Master Plan is intended to serve as the planning framework for a series of utility-scale solar photovoltaic (PV) energy generating facilities on approximately 21,000 acres generally located south of SR-198, west of SR-41 and the Kings River, and east of Fresno County. The WSP Master Plan area consists almost entirely of highly disturbed and chemically impaired cultivated agricultural land. There are no dwellings or agricultural buildings within the plan area. The future solar generating facilities will consist solely of PV solar arrays and associated electrical equipment and interconnections, along with support facilities, substations, and other utilities infrastructure. Individual solar PV projects would be built incrementally within the WSP and would have varying generating capacities depending on size and technology. The combined generating capacity of WSP is estimated to be 2,000 MW, however the final power output could increase with improved solar PV technology. Individual projects are expected to range in size up to 250 MW. Buildout is expected to take approximately 12 years with an average of 167 MW (or 1,670 acres) developed per year. Individual projects proposed within the WSP would be subject to CEQA review and discretionary approval by Kings County.

WSP Gen-Ties Corridors Plan

The WSP Gen-Tie Corridors Plan addresses the two gen-tie lines that would deliver power from the WSP to the Gates Substation in Fresno County where it would then be transferred to the State electrical grid. The two proposed gen-tie lines are:

WSP-South to Gates Gen-Tie Corridor

This new 11.5± mile, 230-kV transmission line would run parallel and adjacent to the existing Nevada and Jayne Avenues from WSP to the Gates Substation. The corridor would begin at a planned substation in WSP near the junction of Nevada Avenue and 25th Avenue in Kings County. It would then run westward along the north side of Nevada Avenue to the Fresno County line where Nevada Avenue becomes Jayne Avenue. The line would continue to run westward along the north side of Jayne Avenue in Fresno County until it reached the Gates Substation. Although two corridors (WSP-South and WSP-North) are planned, an optional configuration would run both transmission lines parallel together in just one of the corridors. The corridors are both planned to be 350' to accommodate this flexibility.

WSP-North to Gates Gen-Tie

This second new 11.5± mile, 230-kV transmission line would be constructed in Kings and Fresno Counties. This line would begin at a planned substation in the northern portion of the WSP site in Kings County and then run southwestward to the Gates Substation in Fresno County. It would be located parallel and adjacent to the existing 230-kV Henrietta-Gates transmission line. This northern gen-tie alignment may not be pursued if it is ultimately determined that a second parallel gen-tie along the WSP-South to Gates Gen-Tie would be preferable. Alternatively, this gen-tie corridor may accommodate parallel WSP gen-ties if the WSP-South to Gates Gen-Tie is not utilized. This corridor is planned to be 350 wide to accommodate two parallel gen-tie lines.

Comments

The proposed Project represents a comprehensive approach to renewable energy development on highly disturbed land which, due to drainage and chemical complications, is severely impaired for continued agricultural use and is being retired from farming. Defenders has long advocated for just this type of master planned renewable energy development and is pleased to see WSP moving forward. At the same time, the Project, if built, would entail the significant conversion of open lands to the light industrial nature of a solar power plant. Although the WSP plan area is highly disturbed and impaired, the site does provide some habitat for special status species. The 23± miles of new transmission lines also traverse the potential habitat of a variety of special status species. The proposed Project could result in the loss of habitat and displacement of State and Federally listed wildlife species including:

blunt-nosed leopard lizard (*Gambelia sila*)
California Jewelflower (*Caulanthus californicus*)
California least tern (*Sternula antillarum browni*)

Kern mallow (*Eremalche parryi ssp. kernensis*)
Nelson's antelope squirrel (*Ammospermophilus nelsoni*)
San Joaquin kit fox (*Vulpes macrotis mutica*)
San Joaquin woollythreads (*Monolopia congdonii*)
Swainson's hawk (*Buteo swainsoni*)
Tipton kangaroo rat (*Dipodomys nitratoides nitratoides*)

The DEIR should provide the following:

Science Based Baseline Biological Information
The proposed Project is located within the known territory of special status species and the WSP and gen-tie corridors may be occupied or utilized by these species. Biological field surveys for these species must be completed and the analysis, and any mitigation strategies, in the DEIR must be based on these studies. Without survey information, any impact analysis would be tenuous and incomplete and it would not be possible to ascertain if any proposed mitigation measures are appropriate. We recommend WSP and Westlands Water District engage in full consultation with the US Fish and Wildlife Service (FWS) and the California Department of Fish and Wildlife (CDFW) for guidance on impact assessment and mitigation and that the appropriate level of surveys be completed.

Whole Project Addressed
The DEIR must address the whole of the project including the construction, operation and maintenance of tap lines, telco/fiber optic lines, and substations located both on and off-site.

Compensatory Mitigation for Loss of Habitat
The proposed Project including the transmission facilities has the potential to impact habitat for a number of State and Federal threatened and endangered species. This loss of habitat could be significant and would need to be mitigated through the establishment of compensatory mitigation at prescribed ratios. Again, this mitigation should be determined through consultation with FWS and CDFW.

Project Construction and Operation Protocols Must be Wildlife Friendly
The DEIR, in consultation with FWS and CDFW, must identify project construction and operation protocols to avoid and minimize impacts to wildlife. Protocols could include construction and operation protocols, buffer zones, shielded lighting, and a prohibition on the use of rodenticides.

Security Fence Must be Wildlife Friendly
Utility scale solar PV projects typically include security fences around each site's perimeter. These fences can result in a significant barrier to wildlife. Security fences must be designed to be wildlife friendly and allow safe passage of San Joaquin Valley kit fox and other species. In the event that chain-link fencing is used, the bottom of the fence must be raised 5-7 inches off the ground and knuckled under along the entire perimeter, thereby permitting easy under-passage by foxes at any location.

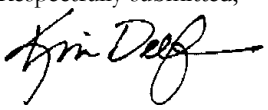
Transmission Lines
The Project proposes up to 23± miles of new transmission lines. While there is a clear need for additional transmission capacity to facilitate renewable energy development in the region, development of that capacity carries the potential for both direct and indirect impacts. The siting of the additional transmission and associated facilities will directly affect where renewable energy development occurs. "Smart from the Start" transmission facility siting which avoids high value farmland and habitat lands will foster future renewable energy development which also avoids high value farmland and habitat. The DEIR must address both alternatives to routing as well as the potential for grow-inducing impacts resulting from additional capacity.

Cumulative Impact Analysis
The proposed Project is just one of many solar projects proposed or permitted in the southern San Joaquin Valley. Cumulatively these projects have the potential to convert thousands of acres from agricultural and open lands to the light industrial land use of a utility scale solar power plant. This is in addition to impacts resulting from residential, industrial, and infrastructure development, and other types of energy development. The cumulative loss of agricultural, habitat, and foraging lands must be addressed in the DEIR.

Conclusion
Defenders is very pleased to see the proposed Westlands Solar Park and related gen-tie facilities project moving forward into CEQA review. We strongly encourage WSP and the Westlands Water District to coordinate and work closely with CDFW and FWS to incorporate the necessary biological analysis and to develop appropriate strategies to avoid, minimize and mitigate any impacts to biological resources from the proposed Project.

We look forward to reviewing the DEIR for this Project. Please include us in any notices for the proposed Project. Thank you once again for the opportunity to provide scoping comments on the Westlands Solar Park project and for considering our comments. If you have any questions, please me at (916) 313-5800 x1 or via email at kdelfino@defenders.org.

Respectfully submitted,



Kim Delfino
California Program Director

Cc:
Julie Vance, CDFW
Bert Verrips, Verrips Consulting
Dan Kim, Westlands Solar Park

October 2, 2017

Comments of the California Consumers Alliance regarding:

Westlands Water District's Revised Notice of Preparation of a Draft Environmental Impact Report on Westlands Solar Park Master Plan and Gen-Tie Corridor Plan.

Introduction:

California Consumers Alliance (CCA) is an organization established for the purpose of providing consumers with access to the technical and analytical resources needed to fully and effectively participate in electric regulatory matters affecting consumers including Federal Energy Regulatory Commission (FERC)-jurisdictional transmission planning processes. CCA members are electricity consumers who reside and work in the service territories of the State's Investor Owned Utilities (IOUs): PG&E, SCE, and SDG&E. The IOUs' transmission facilities comprise a major portion of California's integrated high voltage electrical grid that serves customers of the IOUs and other Load Serving Entities. Our organization works with subject matter experts and analysts with experience in the complex fields of energy markets, transmission planning, generation technologies, and regulatory policy. CCA advocates for efficient, cost effective and environmentally sensitive solutions to the identified needs of the State's electrical grid.

We appreciate the Westlands Water District's notification of the Revised Notice of Preparation of Draft EIR… and the opportunity to respond.

Concerns:

1) Missing Facts:

CCA finds the overall approach employed by the Westlands Water District (WWD) for its "Planned Transmission" to be fundamentally lacking. As pointed out in our previously submitted comments, the WWD's original NOP contains unsubstantiated claims regarding the "need" for and "cost effectiveness" of WWD's proposed transmission facilities. During the scoping meeting on April 9, 2013, a WWD representative made unproven statements regarding insufficient power and grid capacity in the Fresno area. Unfortunately the revised NOP fails to address these factual shortcomings.

Notwithstanding the modifications outlined in the revised NOP, it is noted that WWD fully intends to proceed with a 500 kV transmission line parallel to interstate 5, however, that

project will no longer be analyzed within WWD's EIR, but is being passed on to the Western Area Power Administration to handle.

Since the original intent remains largely in place, we request WWD clarify whether it still holds its position that the full build-out of Westlands Solar Park solar development will require; 1) transmission upgrades to convey the generated power to the Gates Substation, and; 2) the addition of transmission capacity to the existing 500-kV Central California Transmission Corridor along U.S. Interstate 5. If so, please provide the supporting evidence.

2) Additional Clarifications sought:

WWD's revised NOP is ambiguous regarding who would own, operate, and maintain the Gen-Ties Corridors. This information is critical to understanding; 1) the purpose; 2) who the beneficiaries are, and thus; 3) who is required to pay for the planned Gen Ties.

The original NOP indicated that the purpose of the Westlands Solar Park Master Plan and Planned Transmission Facilities is to facilitate the reuse of drainage-impaired farmland within Westlands Water District for renewable energy development, and to provide the means for efficient interconnection of Westlands solar power generation to the State electrical grid, the Helms Pumped Storage Facility, and the Fresno-area electrical market.

We recognize that reuse of lands remains a goal. What is not clear however, is whether WWD's other previously stated project objectives remain in place.

In the original NOP of EIR, various project objectives are attached specifically to each of three transmission corridors. Since only the Henrietta–Gates corridor, (renamed WSP North-Gates Gen-Tie) remains included in the revised NOP, should stakeholders assume that all project objectives previously attributed to the Westlands Transmission Corridor and the Helm-Gregg Corridor are likewise removed/eliminated?

3) Project Alternatives:

For the record, CCA continues to urge examination and consideration of feasible alternatives. In addition to our 3 previously submitted recommendations (please note our alternatives **I**, **II**, and **III** should be updated with the most recent RPS portfolios and preferred resource assumptions—available from the CPUC and CEC) please consider the following:

a. CCA Alternative IV: Distributed Generation

WWD is anticipating 2000 MW of solar PV in the WSP area between 2018 and 2030. Even if a need for this capacity is established, distributed PV is better for California than remote utility-scale PV. Distributed PV avoids the need for building large transmission lines which would add significant costs. Furthermore utility-scale PV and associated transmission lines reduces reliability (delivery to load), reduces system resiliency, increases costs due to line losses, congestion, operation and maintenance, increases chances of fire, creates challenges for responders engaging in fire suppression, and, causes environmental degradation.

Please note that the Distributed PV alternative, along with simply fallowing drainage-impaired lands in the WSP area would fulfill most of the Project Objectives. An added benefit is that occasional flooding, which is likely to occur in the WSP study area, would not impact distributed generation resources. Moreover, occasional flooding in the vicinity of the Tulare Lake bed would serve to recharge ground water thus helping to alleviate ongoing subsidence and related impacts to public infrastructure in the WSP area.

b. CCA Alternative V: Collector System and DCTL in a Single Corridor

The WSP Master Plan contemplates two 230 kV corridors. The northern corridor cuts diagonally across active farmland. If and when the need for this project is firmly established, CCA's transmission planning expert recommends consideration be given to a single double-circuit 230 kV gen-tie in the southern gen-tie corridor. A single double circuit tower line would reduce the width of the required right of way, and therefore reduce costs and impacts. Furthermore CCA's qualified expert suggests the WSP plan be modified to include an underground collector system for the entire WSP area with the hub of the collector system being at the southern end of the WSP area. This hub would be at the eastern terminus of the southern gen-tie corridor. Consideration could be given to a single 500 kV gen-tie instead of double circuit 230 kV gen-tie. However 500 kV towers are taller and 500 kV transformers are larger than 230 kV transformers.

APPENDIX B-2

Original Notice of Preparation (NOP) and Comments

March 2013

[Superseded by Revised NOP of August 2017]
[Contained in Appendix B-1]

This page intentionally left blank

NOTICE OF PREPARATION

To: State Agencies
Responsible Agencies
Local and Public Agencies
Interested Parties
Trustee Agencies

From: Westlands Water District

3130 N. Fresno Street, P.O. Box 6056
Fresno, CA 93703-6056
Contact: Kiti Buelna

Subject: **1) Notice of Preparation (NOP) of a Draft Environmental Impact Report (EIR) Pursuant to the Requirements of the California Environmental Quality Act (CEQA)**
2) Notice of Scoping Meeting

Westlands Water District (WWD or District) will be the Lead Agency and will prepare an Environmental Impact Report (EIR) for the project identified below. We need to know the views of your agency as to the scope and content of the environmental information which is germane to your agency's statutory responsibilities in connection with the proposed project. Your agency will need to use the EIR prepared by our agency when considering your permit or other approval for the project.

The project description, and location, and a discussion of the project's probable/potential environmental effects are contained in the attached materials.

Due to the time limits mandated by State law, we ask that you respond at the earliest possible date, but *not later than thirty (30) days* after receipt of this notice, which date is anticipated to be April 15, 2013. Please submit your comments by 5:00 P.M. on April 15, 2013.

A SCOPING MEETING IS SCHEDULED TO BE HELD AT WESTLANDS WATER DISTRICT BOARD OF DIRECTORS CHAMBERS, 3130 N. FRESNO STREET, FRESNO, CALIFORNIA, AT 3:00 to 5:00 P.M., ON TUESDAY, APRIL 9, 2013. ALL INTERESTED AGENCIES, PARTIES AND THE GENERAL PUBLIC ARE INVITED TO ATTEND.

Please send your response to **Kiti Buelna** at the address shown above. We will need the name of a contact person in your agency or organization.

Project Title: Westlands Solar Park Master Plan and Related Transmission Facilities

Project Location: Avenal Cutoff Road and Laurel Avenue, Kings County

Project Proponents: Westlands Water District and Westside Holdings LLC

Date: March 13, 2013 Signature: _____

Jose Gutierrez
Title: Deputy General Manager Resource

Reference: California Administrative Code, Title 24, Sections 15082(a), 15103, and 15375

1. Project Title

Westlands Solar Park Master Plan and Related Transmission Facilities

WSP Master Plan and Related Transmission Facilities include:

1. Westlands Solar Park (WSP) Generating Facilities (see Figures 1 and 2)
Consisting of all or part of the following Sections:
Township 20S Range 18E – Sections 24, 25, 34, 35
Township 20S Range 19E – Sections 4-9, 14-23, 26-35
Township 21S Range 19E – Sections 3-10, 16, 20, 21, 29-31
Township 22S Range 19E – Section 6

2. Henrietta to Gates Transmission Upgrades – New 230-kV transmission line running parallel and adjacent to the existing Henrietta to Gates transmission corridor, between the WSP to the Gates Substation (see Figures 2 and 3)

3. Westlands Transmission Corridor – Upgrades to Central California Transmission Corridor from Gates Substation to Los Banos Substation (see Figure 3)

4. Helm to Gregg Transmission Corridor – New transmission corridor connecting the Westlands Transmission Corridor from Helm Substation to Gregg Substation (See Figure 3)

2. Lead Agency Name and Address

Westlands Water District
3130 N. Fresno Street, P.O. Box 6056
Fresno, CA 93703-6056

3. Contact Person and Phone Number

Kiti Buelna
(559) 241-6226

4. Project Location

WSP Generating Facilities – The approximately 24,000-acre Westlands Solar Park (WSP) is located in west-central Kings County and is generally bounded by State Route 198 on the north, State Route 41 on the southeast, and the Fresno County line on the west (see Figures 1 and 2). The WSP plan area consists almost entirely of cultivated agricultural land. There are no dwellings or agricultural buildings within the plan area. County roads that traverse the plan area include Avenal Cutoff Road, Laurel Avenue, and Nevada Avenue. Two high voltage transmission corridors pass through the northwest corner of the plan area in a northeast-southwest direction. A natural gas transmission pipeline traverses the WSP in a northeast-southwest direction running parallel and east of Avenal Cutoff Road. A branch pipeline heads east along the south side of Laurel Avenue to Stratford.

Henrietta-Gates Transmission Upgrades – This would consist of a new 230-kV transmission line running parallel and adjacent to the existing 230-kV Henrietta-Gates transmission line, for a distance of approximately 11 miles between the WSP site and the Gates Substation (see Figure 2).

Westlands Transmission Corridor – This transmission corridor would provide needed upgrades to the Central California Transmission Corridor (Path 15) in the segment between the Gates Substation and the Los Banos Substation, a distance of approximately 87 miles. The new transmission corridor

would diverge from the Path 15 alignment near the City of Huron and head north and northwest through the interior of Westlands Water District, and then head west alongside the existing Panoche-Helm transmission corridor to rejoin Path 15 about four miles south of the Pacheco Substation, beyond which the alignment would run adjacent to Path 15 to the Los Banos Substation (see Figure 3).

Helm to Gregg Transmission Corridor – This corridor would branch off the planned Westlands Transmission Corridor at the Helm Substation near the City of San Joaquin and head northward across the San Joaquin River, and then eastward to the Gregg Substation located north of Fresno and east of State Route 99 (see Figure 3).

5. Lead Agency and Project Sponsor Names and Addresses

Lead Agency
Westlands Water District
P.O. Box 6056
3130 N. Fresno Street
Fresno, CA 93703-6056

And

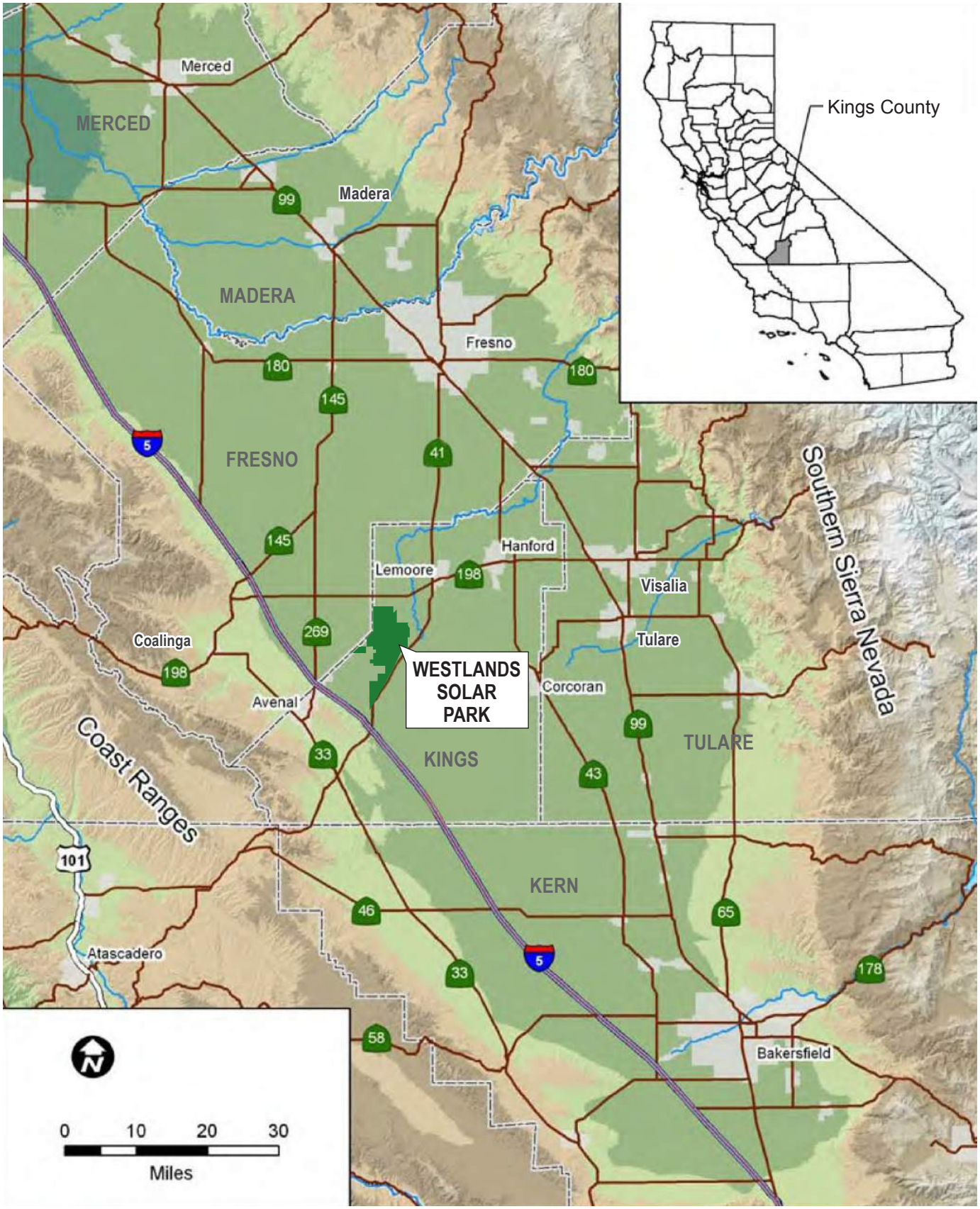
Project Sponsor
Westside Holdings LLC
1005 N. Demaree
Visalia, CA 93291-4101

6. General Plan

The Kings County 2035 General Plan categorizes all of the lands within the WSP plan area as "Agriculture Open Space." The Land Use Element of the General Plan designates the lands within the plan area as either "General Agriculture – 40 Acre (South County)" or "Exclusive Agriculture – 40 acre." General Plan "Land Use Objective B7.1" states: "Allow compatible Open Space and Public uses of land within the Agriculture Open Space area of the County." GP "Land Use Policy B7.1.2" provides: "Power generation facilities for commercial markets shall be allowed and regulated through the Conditional Use Permit approval process, and include thermal, wind, and solar photovoltaic electrical generating facilities that produce power."

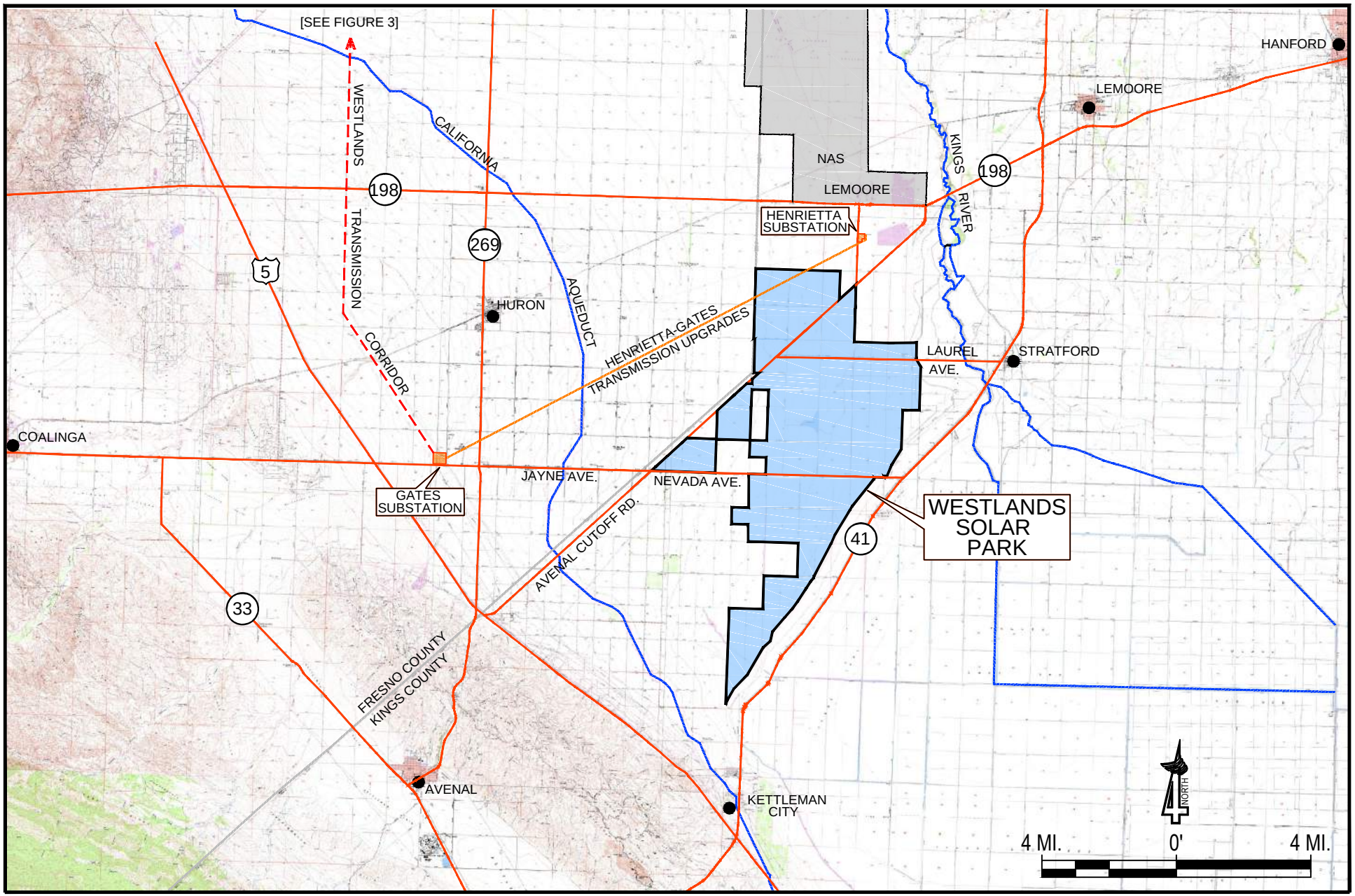
The WSP plan area consists entirely of unincorporated territory, and no portion of the plan area lies within the Primary or Secondary Sphere of Influence of an incorporated City or within a Community District.

The Naval Air Station Lemoore is located to the north of the WSP plan area and the majority of the plan area lies within the Military Influence Area (MIA) of NAS Lemoore. The northern portion of the WSP plan area is subject to NAS Height Restriction Zones "D" and "G" where maximum allowable structure heights are 500 feet in each case. The County General Plan's Exclusive Agriculture land use designation corresponds to lands subject to military aircraft noise levels of 70 dB CNEL or greater, and the applicable General Plan policy would limit or discourage land uses that would increase noise and safety risks to inhabitants. There are no other restrictions on WSP land use associated with NAS Lemoore.



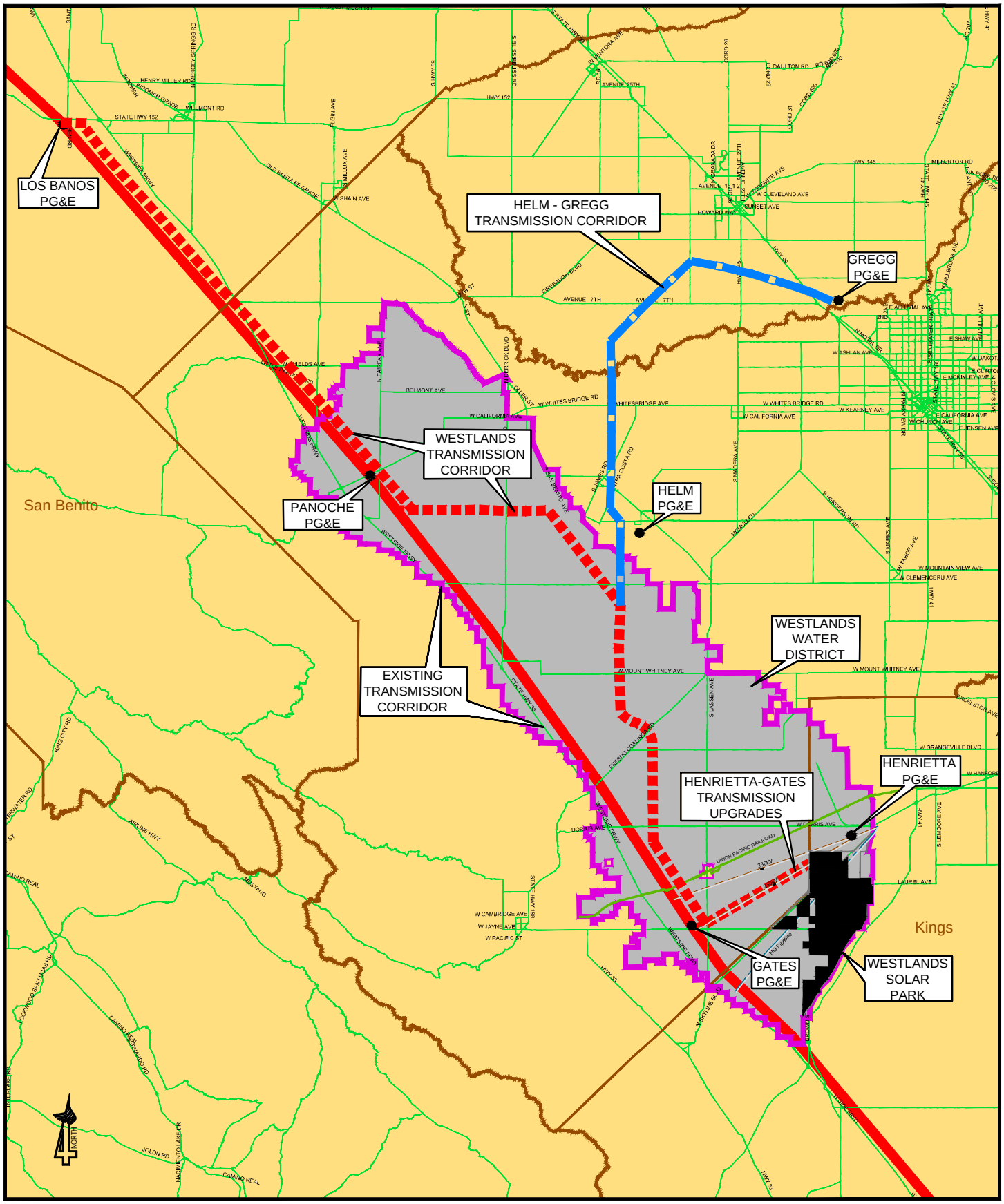
REGIONAL CONTEXT

FIGURE 1



VICINITY MAP

FIGURE 2



PLANNED TRANSMISSION CORRIDORS

FIGURE 3

7. Zoning

The majority of the WSP plan area is zoned "AG-40 (General Agriculture – 40 Acre Min.)" on the Zone Plan of Kings County, and the lands located north of Kansas Avenue are zoned "AX (Exclusive Agriculture)." Both zoning districts permit solar photovoltaic electrical generating facilities as a conditional use.

8. Description of Project

Overview

The overall project consists of the Westlands Solar Park Master Plan and three related transmission facilities, as follows: 1) Westlands Solar Park Generating Facilities; 2) Henrietta-Gates Transmission Upgrades, connecting WSP and the Gates Substation; 3) Westlands Transmission Corridor, connecting Gates and Los Banos Substations; and 4) Helm to Gregg Transmission Corridor, connecting Gates and Gregg Substations via the southern segment of the Westlands Transmission Corridor. These project elements, which are described in further detail below, will all receive program-level environmental review in the EIR.

Westlands Solar Park Master Plan and Related Transmission Facilities

Overall Goals

The Westlands Solar Park Master Plan is intended to fulfill the following goals of the Project:

1) To provide a comprehensive and cohesive planning document to guide and facilitate the beneficial reuse of drainage-impaired lands through development of renewable energy generation in the Westlands Competitive Renewable Energy Zone (CREZ).

2) To establish the preferred transmission corridors routes through the District. Selection of these routes would provide renewable energy generation deliveries from drainage-impaired lands to the State electrical grid. The paths are aligned in a manner that best facilitates the economic development of the drainage-impaired lands for renewable energy generation; or stated conversely, to ensure that transmission planning decisions by others do not result in transmission routing that is unfavorable to drainage-impaired lands or becomes an impediment to renewable power generation.

Project Objectives of the WSP Master Plan

The major goals articulated above encompass the following specific objectives of the WSP Master Plan:

- Contribute to the solution of area-wide agricultural drainage problems by retiring the WSP site from irrigated agriculture.

- Provide for the economically viable and environmentally beneficial reuse of the site's physically impaired agricultural soils.

- Facilitate the redirection of scarce surface water allocations from the WSP plan area to more productive agricultural land that is not physically impaired by saline soils, high groundwater, or selenium contamination.

- Provide utility-scale power generation on physically-impaired farmland in order to reduce pressure for renewable energy development on prime agricultural soils elsewhere.

- Provide a large utility-scale solar generation facility on highly disturbed lands which provide minimal habitat value for wildlife.

- Provide a low-impact alternative location for the siting of utility-scale renewable energy development that might otherwise occur on lands with high habitat value for protected wildlife species.

- Provide utility-scale solar generation in a location that is already traversed by high-voltage transmission lines.

- Help implement the State's goal of increased electrical generation with renewable resources under California's Renewables Portfolio Standard (RPS).

- Help implement the California Renewable Energy Transmission Initiative (RETI) by providing for the development of the solar resource within the Westlands CREZ. (It is noted that the Westlands CREZ received the highest state-wide environmental ranking among all CREZs designated through the RETI process.)

- Contribute to overall reduction in greenhouse gas emissions by generating electricity that is not based on the combustion of fossil fuel, pursuant to The California Global Warming Solutions Act (AB 32).

- Adopt and implement a Master Plan that avoids sensitive wildlife habitat, results in no significant biological impacts, and enhances the overall habitat quality of the WSP site.

- Create new employment opportunities for local residents.

- Positively contribute to the local economy through stimulation of economic activity such as creation of secondary multiplier employment and the purchase of materials and services.

- Provide community benefits through increased property tax and sales tax revenues.

- Adopt a Master Plan that is consistent with all applicable local planning designations, policies, and requirements, without the need for General Plan or Zoning amendments or special guidelines to accommodate solar development under the WSP Master Plan.

Project Objectives of the Henrietta-Gates Transmission Upgrades

- Provide delivery of renewable solar power from WSP to the State electrical grid in a cost-effective manner while minimizing impacts to the environment and the agricultural community.

Project Objectives of the Westlands Transmission Corridor

- Help provide reliability, flexibility, and stability to the State electrical grid by completing needed upgrades to the Gates to Los Banos segment of the Central California Transmission Corridor.

- Provide for electrical transmission through the areas of physically-impaired retired farmland in the interior eastern portions of the Westlands Water District in order to facilitate the productive reuse of these retired lands for renewable solar generation.

- Adopt a transmission route that achieves the primary objectives of this transmission facility in a manner that is cost-effective and results in the least impacts to the environment and the agricultural community.

Project Objectives of the Helm to Gregg Transmission Corridor

- Provide for increased capacity of transmission interconnection between the State electrical grid and the electrically-constrained Fresno area load center.

- Provide for delivery of renewable solar power from WSP to the Fresno load center.

- Help provide for delivery of renewable solar power from WSP to the Helms Pumped Storage Facility in order to maximize the capabilities of the Helms facility in integrating renewable energy into the State power supply through increased load balancing flexibility.

- Adopt a transmission route that achieves the primary objectives of this transmission facility in a manner that is cost-effective and results in the least impact to the environment and the agricultural community.

Role of WSP Master Plan and Transmission Corridor Planning in Westlands Water District Policy Scheme

The WSP Master Plan is intended to serve as a further refinement of WWD's Land Use and Asset Management Plan. More specifically, the WSP Master Plan provides further definition of the policy directive contained in the Land Use and Asset Management Plan which identifies renewable energy development as a preferred form of development for the reuse of retired lands, particularly those lands located close to existing electrical substations. The planned transmission corridors are intended to advance the implementation of the WSP Master Plan by providing the means for efficient interconnection of Westlands solar generation to the State electrical grid, the Helms Pumped Storage Facility, and the Fresno-area electrical market.

Detailed Project Description

The Westlands Solar Park Master Plan and the related transmission corridors are further described below.

Westlands Solar Park Generating Facilities

The Westlands Solar Park consists of the development of approximately 24,000 acres in west-central Kings County for a utility-scale solar energy generation facility (see Figures 1 and 2). The solar generating facilities will consist solely of photovoltaic solar arrays and associated electrical

equipment and interconnections, along with support facilities, substations, and other utilities infrastructure. Approximately 2,400 Megawatts (MW) is the total estimated electrical generating capacity at buildout. (Note: The RETI process estimated up to 5,000 MW of solar generation for the Westlands CREZ.) The overall pacing of solar development is expected to proceed at an average rate of 2,000 acres (or 200 MW) per year over 12 years. The WSP generating facilities would receive program-level review in the EIR.

Upgrades to Existing Henrietta to Gates Transmission Corridor

The full buildout of WSP solar development will require transmission upgrades to convey the generated power to the Gates Substation. The planned upgrades would involve the construction of a new 230-kV transmission tower line running parallel to the existing Henrietta-Gates corridor, commencing from a new substation planned for construction inside the north WSP boundary, and running southwestward for a distance of about 11 miles to the Gates Substation on Jayne Avenue near I-5. The new transmission line may run along either the north or south side of the existing transmission corridor, and both alternatives would be analyzed in the EIR. The Henrietta-Gates transmission upgrades would receive program-level environmental review in the EIR.

Westlands Transmission Corridor

The full buildout of the WSP plan area would require the addition of transmission capacity to the existing 500-kV Central California Transmission Corridor along I-5. This would involve the construction of a 500-kV transmission line running generally parallel to the existing transmission corridor from the Gates Substation north for a distance of about 87 miles to the Los Banos Substation (see Figure 3). The planned alignment would head northwestward from the Gates Substation and would diverge from the Path 15 alignment near the City of Huron and then head north to the Helm Substation. It would then turn westward following the existing Helm-Panoche transmission corridor westward to rejoin the Central California Transmission Corridor approximately four miles south of the Panoche Substation. From this point northwestward the new transmission line would run adjacent to and east of the existing transmission line. The alignment of an approximately 40-mile segment of this new transmission corridor through the interior of Westlands and would provide interconnection for future renewable generation in the physically-impaired lands in the eastern portions of Westlands Water District. The Westlands Transmission Corridor would receive program-level environmental review in the EIR. An alternative to this interior alignment, consisting of a new parallel transmission line constructed alongside the existing Path 15 transmission corridor for the entire distance between the Gates and Los Banos substations, will be evaluated in the Project Alternatives chapter of the EIR. The Westlands Transmission Corridor would also provide a strategic junction (near Helm Substation) for extending a new transmission line (described below) to connect the Gates Substation to the Gregg Substation (north of Fresno), described below.

Helm-Gregg Transmission Corridor

This new transmission corridor would branch off the planned Westlands Transmission Corridor at the Helm Substation near the City of San Joaquin and head northward across the San Joaquin River, and then eastward to the Gregg Substation located north of Fresno and east of State Route 99 (see Figure 3). This transmission corridor is intended to provide for the growing electrical demand in the Fresno area and would also facilitate the transmission of adequate power to the upstream Helms Pumping Plant in order to allow the utilization of the full potential of this facility for pumped storage. The Helm-Gregg Transmission Corridor would receive program-level environmental review in the EIR.

Purpose of the EIR on the WSP Master Plan and Related Transmission Facilities

The purpose and function of the Westlands Solar Park Master Plan EIR is to provide program-level CEQA review and clearance for the following actions by the Westlands Water District Board of Directors:

- Adoption of the Westlands Solar Park Master Plan as the policy and planning framework for incremental development of solar PV generating facilities within WSP.

- Adoption of the Henrietta-Gates Transmission Upgrades for delivery of WSP renewable solar generation to the State electrical grid at the Gates Substation.

- Adoption of the Westlands Transmission Corridor as the preferred transmission route for upgrading the Central California Transmission Corridor between the Gates and Los Banos Substations.

- Adoption of the Helm-Gregg Transmission Corridor as the preferred transmission route for increasing the capacity of the interconnection between the Central California Transmission Corridor and the Fresno load center at the Gregg Substation, and for increasing the load balancing capacity of the Helms Pumped Storage Facility.

9. Surrounding Land Uses and Setting

WSP Plan Area – The lands of the WSP plan area and surrounding areas consist almost entirely of cultivated agricultural land. The WSP site includes no residential or non-residential structures. The Shannon Ranch complex is located just off-site to the west at the intersection of Avenal Cutoff Road and Gale Avenue. The ranch complex consists of 20 single-family units of worker housing, a ranch office, a machine shop, various other outbuildings and infrastructure facilities, and an airstrip. The remaining lands surrounding the WSP site are sparsely settled. Apart from the Shannon Ranch described above, there are a total of 6 dwellings located within one mile of the project boundary, 2 of which are located within one-half mile.

Henrietta-Gates Transmission Upgrades – The planned transmission upgrades corridor traverses lands in active agricultural cultivation. No portion of the transmission corridor passes over or near residential or non-residential structures or agricultural facilities such as dairies. The corridor would pass over the California Aqueduct and State Route 269 at locations adjacent to or in proximity to existing transmission line crossings.

Westlands Transmission Corridor – The valley-floor segments of the transmission corridor pass through cultivated agricultural lands and retired farmlands within the Westlands Water District. North of the Fresno-Merced County line, the transmission corridor traverses chaparral covered foothills en route to the Los Banos Substation. No portion of the transmission corridor passes over or near residential or non-residential structures or agricultural facilities such as dairies. The corridor passes over several state highways, including I-5, would cross the California Aqueduct in two places. The transmission corridor does not pass over or near any wildlife refuges or other public lands.

Helm-Gregg Transmission Corridor – This transmission corridor passes through cultivated agricultural lands in Fresno and Madera Counties. The corridor passes between the communities of San Joaquin and Tranquillity, and then passes between the Mendota and Kerman wildlife areas before crossing San Joaquin River into Madera County. In southern Madera County, the corridor stays to the west and north of the rural residential development concentrated north of the river. The corridor

crosses over several state highways, including SR-180, SR-145, and SR-99. No portion of the transmission corridor passes over or near residential or non-residential structures or agricultural facilities.

10. Other Approvals Required from Public Agencies

No approvals from other agencies are required for adoption of the Westlands Solar Park Master Plan or the adoption of the transmission corridors. The solar generating projects and transmission projects that will be subsequently brought forward pursuant the WSP Master Plan and the adopted transmission alignments will require the following actions and approvals from other public agencies, including but not limited to those described below:

1) Kings County – Approval of Conditional Use Permits, Grading Plans, Building Permits, Vesting Tentative Parcel Maps or Lot Line Adjustments, Septic System Permits for solar generating facilities; encroachment permits for work within County road rights-of-way.

2) California Energy Commission (CEC) – Approval of Transmission Corridor Zone Designation for the Westlands Transmission Corridor and the Helm-Gregg Transmission Corridor.

3) California Public Utilities Commission (CPUC) – Approval of transmission projects and network upgrades, as required by law.

4) San Joaquin Valley Air Pollution Control District (SJVAPCD) – Administration of the Indirect Source Review (ISR) rule (Rule 9510) for mitigation of regional emissions; approval of dust control plans.

5) Central Valley Regional Water Quality Control Board (RWQCB) – Administration of State stormwater quality requirements, including review of Storm Water Pollution Prevention Plans (SWPPPs).

6) California Department of Transportation (Caltrans) – Encroachment permits for transmission line crossings at I-5, SR-269, SR-33, SR-198, SR-145, SR-180, and SR-99; permits for oversized loads.

7) California Department of Water Resources (DWR) – Encroachment permits for transmission line crossings over the California Aqueduct.

8) California Department of Fish and Game (CDFG) – Lake and Streambed Alteration Agreement/Permit (LSAA) for Helm-Gregg transmission line crossing over the San Joaquin River.

11. Summary of Probable Environmental Effects

The EIR will address all checklist items contained in Appendix G of the CEQA Guidelines. The following is a discussion of the main environmental topics to be covered in the EIR. Those checklist items that are determined to have negligible or no impact associated with them will be briefly discussed in an EIR chapter entitled "Effects Found Not To Be Significant" as provided under Section 15128 of the CEQA Guidelines, and are not discussed below.

Aesthetics

WSP Solar Generating Facilities – The WSP plan area is flat, featureless, and absent of scenic resources. The mountains and foothills of the Coast Ranges are visible on the horizon in distant views to the west. There are no rock outcroppings or historic buildings or important trees on the WSP plan area or adjacent lands. There are no designated State scenic highways in the WSP vicinity and no highways in the area been determined to be eligible for such designation at the County or state level.

The solar arrays installed within the WSP generating facilities would be low in profile, reaching a maximum height of 8 to 10 feet above the ground surface at maximum angle of tilt. Taller support buildings and structures would be dispersed throughout the generating facility. These would include: transformer/inverter enclosures which would be 12 to 15 feet high, operations and maintenance buildings which would be 20 to 30 feet high; above-ground power collection lines with pole heights ranging from 35 to 125 feet. The WSP generating facilities would include about 6 electrical substations which would include elements as tall as 125 feet.

Facility lighting would be largely confined to security lighting for operations and maintenance facilities, construction staging areas, and substations. The solar arrays themselves would not be lighted. The photovoltaic solar panels would be composed of dark non-reflective materials which would minimize the potential for glint and glare.

Henrietta-Gates Transmission Upgrades – The planned upgraded transmission corridor connecting WSP to the Gates Substation would pass through agricultural lands with very few residential buildings. The planned transmission alignment would run parallel to the existing 230-kV transmission line and thus would not introduce a new linear structural element to the visual setting.

Westlands Transmission Corridor – The 40-mile transmission segment running through the interior of the Westlands Water District would introduce a new linear structural element to the visual setting but would avoid rural communities and residences. The southern and northwestern segments of the transmission corridor, totaling approximately 47 miles, would run parallel to the existing transmission corridor and would not introduce a new element to the visual setting along those segments.

Helm-Gregg Transmission Corridor – South of the San Joaquin River, the new corridor would pass through sparsely settled farmland and would avoid existing communities and residences. The river crossing would be by a single span with transmission towers located outside the river banks on either side. North and east of the river, the corridor would pass through areas of mixed agriculture and rural residential, but would avoid encroachment upon existing residences.

The EIR will include detailed analyses of the potential visual impacts and the potential lighting and glare impacts associated with the WSP solar generating facilities and the transmission corridors.

Agricultural Resources

WSP Solar Generating Facilities – Almost all of the lands within WSP plan area are currently in cultivation for various crops. All of the lands within the WSP plan area are formally recognized as "drainage impaired" by the U.S. Bureau of Reclamation. The accumulation of naturally-occurring salts combined with high-groundwater conditions has created severe limitations on agricultural land capability. Due to lack of agricultural drainage facilities, these near-surface soil conditions limit crop choices to salt-tolerant and lower value crops. The lower levels of crop revenue combined with the higher costs associated with managing these impaired lands substantially reduces their agricultural viability relative to non-impaired lands to the west. The Westlands Water District has identified these drainage-impaired lands for retirement from irrigated agriculture. Once retired, these lands would no longer be eligible to receive surface water deliveries from the San Luis Unit of the Central Valley Project (CVP). As non-irrigated lands, all of the soils within the Westlands Solar Park are classified by the Natural Resources Conservation Service (NRCS) as having a Land Capability rating of VII, indicating non-prime agricultural soils.

Much of the land within the WSP plan area is subject to Williamson Act Land Conservation contracts or Farmland Security Zone contracts. Under the Williamson Act amendments contained in SB 618 (Wolk), signed into law in October 2011, the drainage-impaired lands comprising the WSP site would be eligible for conversion to Solar Access Easements.

Henrietta-Gates Transmission Upgrades – The planned upgraded transmission corridor passes through predominantly prime farmlands. The transmission towers would require small amounts of farmland for their footings, and the towers would be spaced about 800 feet apart. Agricultural cultivation would continue beneath the overhead transmission lines although there would be some restrictions on agricultural activities such as aerial spraying in proximity to the lines and towers.

Westlands Transmission Corridor – The interior segment of this transmission corridor would pass mainly through non-prime and retired farmland up to the point where it would rejoin the existing transmission corridor near the Panoche Substation. From the vicinity of the Panoche Substation to the Fresno/Merced County Line, the corridor passes through predominantly prime farmlands. North of the Fresno/Merced County Line the transmission corridor crosses to the foothills on the west side of I-5, which are predominantly covered with non-cultivated chaparral along the route to the Los Banos Substation. Where the transmission corridor traverses prime farmland, the transmission towers would require small amounts of farmland for their footings, and the towers would be spaced about 800 feet apart. Agricultural cultivation would continue beneath the overhead transmission lines although there would be some restrictions on agricultural activities such as aerial spraying in proximity to the lines and towers.

Helm-Gregg Transmission Corridor – Along its entire length through Fresno and Madera counties, this transmission corridor passes through predominantly non-prime farmland. As with the Westlands Transmission Corridor, the transmission towers would require small amounts of farmland for their footings, and the towers would be spaced about 800 feet apart. Agricultural cultivation would continue beneath the overhead transmission lines although there would be some restrictions on agricultural activities such as aerial spraying in proximity to the lines and towers.

The EIR will evaluate all potential impacts to agricultural resources associated with the WSP solar generating facilities and the new transmission corridors.

Air Quality

WSP Solar Generating Facilities – The air quality analysis would evaluate the air emissions associated with construction and operation. During their construction phases, the WSP generating facilities would result in short-term emissions of particulate matter and equipment exhaust, as well as vehicle exhaust from delivery trucks and worker commute trips. Site grading and construction activities would also generate potential particulate emissions from windborne dust. During project operations, emissions would result in long-term emissions from project delivery and commute traffic, and from on-site maintenance activities.

Transmission Corridors – The air quality impacts associated with construction of the Henrietta-Gates, Westlands, and Helm-Gregg transmission corridors would occur primarily in the construction phase, when the potential for dust generation and emissions from vehicles and equipment would be greatest. Once completed, the periodic inspection and maintenance of the transmission lines are expected to result in very low emissions.

The short-term and long-term emissions resulting from construction of the WSP solar facilities, the gen-tie, and transmission corridors will be addressed in a technical air quality assessment prepared by a qualified air quality consultant. The project's potential impacts upon local and regional air quality will be evaluated in the EIR based on the methodologies and thresholds established by the SJVAPCD and the California Air Resources Board (CARB).

Biological Resources

WSP Solar Generating Facilities – The WSP site was converted to agricultural use decades ago, and little or no native vegetation or trees remain. A portion of the existing irrigation canals and ditches within the WSP plan area provide some habitat value for local species and those features would be preserved and expressly avoided by the solar facility and infrastructure development under the Master Plan. Preliminary literature search and data base reviews indicate that no occurrence of State or Federally-listed threatened or endangered species has been recorded on the WSP site or its immediate vicinity. The riparian vegetation that has developed around the tailwater pond in the central area of WSP will be preserved under the WSP Master Plan and protected with buffer zones. The WSP plan area includes no known jurisdictional wetlands or other sensitive natural communities. Biological surveys conducted throughout the WSP site to date indicate that that the WSP is absent of special-status species with the exception of western burrowing owl, a small number of whose burrows occur along irrigation ditches that will be preserved within the WSP plan area. While no sign of kit fox has been identified on or near the WSP plan area, the WSP solar facilities would be required to implement all U.S. Fish & Wildlife Service avoidance and protection measures for possible transient kit foxes, and all solar facilities would include permeable fencing to allow passage of transient kit foxes. All required preconstruction surveys and avoidance measures for protected species would be identified as program-level mitigation measures in the EIR, pursuant to agency protocols and requirements.

Henrietta-Gates Transmission Upgrades – The planned upgraded transmission corridor passes through lands that have been entirely converted to agriculture. There are no known special-status species or sensitive communities that would be significantly affected by either alignment alternative. Program-level biological investigations would identify all species that are likely to be present in the vicinity of the alternative corridor alignments, and would identify survey protocols and program-level mitigations for avoidance of significant impacts to sensitive biological resources.

Westlands Transmission Corridor – The interior segment of the new transmission corridor passes through lands that have been entirely converted to agriculture. The northwestern segment parallel to I-5 runs along the base of Coast Ranges where the presence of several special-status species has been recorded. Program-level biological investigations would identify all species that are likely to be present in the vicinity of the corridor, and would identify survey protocols and program-level mitigations for avoidance of significant impacts to sensitive biological resources.

Helm-Gregg Transmission Corridor – The major portions of this transmission corridor pass through lands that have been entirely converted to agriculture. Areas that are expected to be biologically sensitive include the riparian corridors of Fresno Slough and the San Joaquin River, and the wildlife refuges located south of the river near Kerman and Mendota. The planned transmission corridor alignment avoids the wildlife refuges by several miles and would cross the San Joaquin River where the channel is relatively narrow and sparsely vegetated. The river crossing would be a single span with transmission towers located outside the river banks on either side, thus minimizing the potential for vegetation removal and habitat impact. Program-level biological investigations would identify all species that are likely to be present in the vicinity of the new corridor, and would identify survey protocols and program-level mitigations for avoidance of significant impacts to sensitive biological resources.

Cultural Resources

WSP Solar Generating Facilities – Cultural resources investigations conducted to date have included research of the relevant literature, review of clearinghouse databases, and site reconnaissance by qualified archaeologists and paleontologists. With respect to historic resources, the preliminary finding is that the potential for significant historic resources to be present is small given the general absence of buildings and structures within the WSP plan area. With respect to archaeological resources, there is a low probability that prehistoric archaeological sites are present due to the general absence of water and food resources that would have made the WSP plan area attractive for settlement or periodic use by native peoples. Due to the high level of ground disturbance from agricultural activities, there is also a very low likelihood that intact archaeological sites are present near the ground surface. With respect to paleontological resources, the preliminary finding of the paleontological research and site reconnaissance is that there is a low probability that fossils are present near the ground surface, but there is greater potential that paleontological resources occur in Pleistocene-age materials that underlie the surface alluvium of the WSP plan area at depth.

The cultural resources investigation for the EIR will include a program-level review and assessment of archaeological, historic, and paleontological resources within the WSP plan area, with management recommendations for mitigating any potential significant impacts to cultural resources.

Henrietta-Gates Transmission Upgrades – Conditions along the planned upgraded transmission corridor are similar to those within the WSP plan area, in that the affected lands consist of highly disturbed agricultural fields which are generally absent of buildings and structures. As such, the potential for historic, prehistoric archaeological, and paleontological resources to be present near the ground surface is considered very low. The cultural resources assessment for this corridor will provide program-level review and analysis, along with management recommendations for mitigating any potential significant impacts to cultural resources.

Westlands Transmission Corridor – Conditions within the valley-floor segments of this transmission corridor are similar to those within the WSP plan area and the Henrietta-Gates transmission upgrade corridor, in that the affected lands consist of highly disturbed agricultural fields which are generally absent of buildings and structures. Conditions change at Fresno-Merced County line, beyond which the transmission alignment traverses chaparral covered foothills en route to the Los Banos Substation.

This segment is considered to have moderate sensitivity for prehistoric archaeological resources and low sensitivity for paleontological resources. The cultural resources assessment for this transmission corridor will provide program-level review and analysis, along with management recommendations for mitigating any potential significant impacts to cultural resources.

Helm-Gregg Transmission Corridor – Conditions throughout this transmission corridor are generally similar to those within the WSP plan area and the Henrietta-Gates transmission corridor, in that the affected lands mainly consist of highly disturbed agricultural fields which are generally absent of buildings and structures. The corridor segment at the San Joaquin River crossing is considered to have moderate to high sensitivity for prehistoric archaeological resources. In addition, the area in the vicinity of Tranquillity has high sensitivity for paleontological resources based on the significant Pleistocene fossil deposits found in that area. The cultural resources assessment for the transmission corridor will provide program-level review and analysis, along with management recommendations for mitigating any potential significant impacts to cultural resources.

Geology and Soils

WSP Solar Generating Facilities – The WSP site is not located within an Alquist-Priolo Earthquake Fault Zone, and thus the possibility of ground surface rupture at the site is remote. The WSP generating facilities would be subject to ground shaking from an earthquake centered on the Great Valley Fault Zone or the San Andreas Fault Zone, both located in the Coast Ranges to the west of the site. The potential for these and other seismic hazards, such as liquefaction or seismically-induced settlement, to significantly affect solar facilities within WSP will be evaluated by a qualified engineering geologist. The soils of the site will also be evaluated for potential impacts to structures and foundations, such as soils expansion and ground subsidence. The EIR will address all potential geologic and soils conditions and hazards that could adversely affect the WSP solar development, and identify programmatic mitigation measures to minimize risks associated with any such hazards on the site.

Henrietta-Gates Transmission Upgrades – The geologic, soils, and seismic conditions within the planned upgraded transmission corridor are expected to be similar to those within the WSP site. Ground shaking potential increases to the west as the alignment approaches the major fault zones in the foothills to the west. Similarly, liquefaction potential is expected to be relatively greater within this corridor, compared to the WSP site, due to the presence of looser alluvial soils on lands traversed by the corridor. The relatively lower clay content of the soils within this corridor indicates that soils expansion would be of less concern than within the WSP plan area. The EIR will address all potential geologic and soils conditions and hazards that could adversely affect this corridor, and identify program-level mitigation measures to minimize risks associated with any such hazards.

Westlands Transmission Corridor – The geologic and soils conditions within the valley-floor segments of this transmission corridor are similar to those within the WSP plan area and the Henrietta-Gates transmission upgrade corridor. Conditions change at Fresno-Merced County line, beyond which the transmission alignment traverses chaparral-covered foothills en route to the Los Banos Substation. Relative to the valley floor, this segment would be more vulnerable to ground shaking from nearby fault zones, but less vulnerable to liquefaction or soils expansion. Landsliding potential is moderate in the foothill segment due to the presence of loose soils and sloping terrain. The EIR will address all potential geologic and soils conditions and hazards that could adversely affect the Westlands Transmission Corridor, and identify program-level mitigation measures to minimize risks associated with any such hazards.

Helm-Gregg Transmission Corridor – The geologic and soils conditions within this transmission corridor are similar to those within the WSP plan area and the Henrietta-Gates transmission corridor.

The ground shaking potential would be generally be lower than at the above facilities due to greater distance from the main causative faults. Potential for liquefaction is generally low except where the corridor crosses Fresno Slough south of Tranquillity. The potential hazard from unstable slopes and erodible soils is generally low with the possible exception of the San Joaquin River crossing. The EIR will address all potential geologic and soils conditions and hazards that could adversely affect the Helm-Gregg Transmission Corridor, and identify program-level mitigation measures to minimize risks associated with any such hazards.

Greenhouse Gas Emissions

As required under CEQA, the EIR will address the potential for the WSP generating facilities and related transmission corridors to generate greenhouse gas emissions. The climate change impacts associated with the construction of the solar facilities and transmission lines will be evaluated in terms of the criteria established by the San Joaquin Valley Air Pollution Control District. While some greenhouse gas emissions would be generated during construction and operation of the facilities, it is expected that the analysis will show that these emissions will be more than offset by the reduction in demand for fossil-fuel generated electricity provided by the development of renewable energy at the Westlands Solar Park.

Hazards and Hazardous Materials

WSP Solar Generating Facilities – The past and current agricultural operations within the WSP plan area involved the storage and use of fuels, pesticides, herbicides, and fertilizers, and also included exploratory and production drilling for petroleum. Program-level environmental site investigations will be undertaken in conjunction with the EIR in order to determine the potential presence of residual agricultural chemicals or other hazardous materials within the WSP site. This will consist of a data base search to determine if the WSP plan area or adjacent lands are listed on any regulatory databases of recorded hazardous materials sites. A program-level analysis will discuss potential impacts and identify programmatic mitigations. The EIR will identify further investigations to be conducted, as appropriate, at such time as project-specific environmental review for WSP solar generating facilities is undertaken.

The construction and operation of the WSP solar facilities would involve the use of various fuels and materials which are classified as hazardous materials. For example, transformers would contain mineral oil which would require secondary containment. The EIR will address the potential use of hazardous materials and discuss the hazardous materials management plans and response plans to be implemented in case of accidental spill or unauthorized release of hazardous materials. The EIR will also discuss the potential for solar panel constituents to pose a health and safety hazards, and the potential for panel glare to result in hazards to aviation or driving.

Transmission Corridors – The Henrietta-Gates, Westlands, and Helm-Gregg transmission corridors will be subject to program-level evaluation which will consist of a data base search to determine if the transmission corridors or adjacent lands are listed on any regulatory databases of recorded hazardous materials sites. A program-level analysis will discuss potential impacts and identify programmatic mitigations to address any existing hazards as well as potential hazards during operation and maintenance. The EIR will identify further investigations to be conducted, as appropriate, at such time as construction-level environmental review for the transmission corridors is undertaken. The EIR will also discuss the potential hazards from electromagnetic fields (EMF) associated with high voltage transmission lines.

Hydrology and Water Quality

The primary hydrology and water quality issues to be addressed in the EIR include flooding, drainage and surface water quality, as discussed below. Potential impacts related to water supply and groundwater are addressed subsequently under "Utilities and Service Systems."

Flooding and Drainage

WSP Solar Generating Facilities – There are no FEMA-designated floodplains or floodways on or immediately adjacent to the WSP plan area. There are small low-lying areas at the southern and eastern ends of the WSP plan area that are not FEMA-designated floodplains but are identified in the "Awareness Floodplain Mapping" by the California Department of Water Resources (DWR) as being subject to minor flooding, although the flood hazard is unspecified and no regulatory requirements apply to these areas. Therefore, the potential for solar facilities to be subject to flooding impacts or to impede flood flows would be negligible. The WSP solar developments would result in a very small increase the volume and rate of stormwater flows generated at the site. Although the site would be largely covered by solar arrays mounted on steel posts, rainfall would drain off the tilted panels to the permeable ground below. The existing site terrain would undergo very little modification, and the solar development would add a very small percentage of impervious surfaces to the site. New impervious surfaces would be confined to foundations and pavements added by transformer/inverter enclosures, operations and maintenance facilities, substations, and all-weather maintenance roadways. The total increase in impervious surface coverage is estimated to be approximately 3 percent, which would result in little or no change to off-site runoff or contribution to downstream flood flows. The EIR will include a full evaluation of potential flooding and drainage impacts associated with the solar development, and identify program-level mitigations as appropriate.

Henrietta-Gates Transmission Upgrades – The planned upgraded transmission corridor traverses small areas of floodplain associated with drainage courses and low-lying areas. While narrow floodplain corridors can be spanned by power lines and avoided by transmission towers, it is possible (but unlikely) that some tower footings would need be placed in the 100-year floodplain in any areas where the area subject to flooding is large and cannot be entirely spanned. However, the footprints of the tower footings would be small and would not be expected to obstruct or redirect flood flows or increase the potential for downstream flooding. The potential flooding impacts associated with the Henrietta-Gates transmission corridor would be evaluated in the EIR, with any potentially significant impacts identified along with programmatic mitigation measures.

Westlands and Helm-Gregg Transmission Corridors – Both transmission corridors traverse floodplains associated with drainage courses and low-lying areas along their alignments. It is possible, but unlikely, that some transmission tower footings would need to be placed in the 100-year floodplain where the area subject to flooding is large and cannot be entirely spanned. However, any such tower footprints would be relatively small and would not be expected to obstruct or redirect flood flows or increase the potential for downstream flooding. The planned San Joaquin River crossing for the Helm-Gregg Transmission Corridor is at a relatively narrow section of floodplain and can be spanned without placing towers in the floodplain or river channel. The potential flooding impacts associated with the transmission corridors would be evaluated in the EIR, with any potentially significant impacts identified along with corresponding program-level mitigation measures.

Surface Water Quality

WSP Solar Generating Facilities – During grading and construction for WSP solar facilities, stormwater runoff would have the potential to erode exposed soils. During project operations, stormwater runoff would have the potential to carry pollutants from impervious surfaces to downstream water bodies. Due to the relatively level terrain of the WSP plan area and the absence of natural drainage courses, it is expected that surface water pollution could be readily mitigated through standard erosion and sediment controls during the construction phases, and through best management practices during the operational phases of solar development. The EIR will evaluate the potential impacts to surface water quality that could occur during the construction and operational phases of the project, and identify corresponding program-level mitigation measures.

Transmission Corridors – The Henrietta-Gates, Westlands, and Helm-Gregg transmission corridors would involve the construction of a series of transmission towers, the creation of maintenance access routes to those towers, and the establishment of sites for pulling and tensioning of the high voltage conductors. Grading and construction for the access roads and tower footings, and activities in the construction staging and laydown areas, would have the potential to result in soil erosion, sedimentation, and spills of hazardous materials. The potential for water quality impacts would be greater in areas with sloping terrain which would induce greater runoff rates than the relatively level terrain of the valley floor. Operations and maintenance activities would involve the potential use of hazardous materials. The potential water quality impacts associated with these activities will be addressed in the EIR along with program-level measures for preventing water quality impacts during construction and operation of the transmission lines.

Land Use and Planning

WSP Solar Generating Facilities – The WSP plan area includes no existing residential or non-residential structures that would be displaced or affected by the solar generating facilities. The lands surrounding the WSP plan area consist almost entirely of cultivated agricultural land. The Shannon Ranch complex is located off-site to the west at the intersection of Avenal Cutoff Road and Gale Avenue. This ranch complex consists of 20 single-family units of worker housing, a ranch office, a machine shop, various other outbuildings and utilities infrastructure, and an airstrip. The remaining lands surrounding the WSP plan area are sparsely settled. Apart from the Shannon Ranch, there are a total of 6 dwellings located within one mile of the WSP boundary, 2 of which are located within one-half mile. The EIR will evaluate the potential for land use conflicts and adjacency impacts with residential and non-residential land uses in proximity to the WSP plan area.

The Westlands Solar Park is surrounded by agricultural lands that are expected to remain in cultivation for the foreseeable future. While solar PV facilities are generally considered compatible with agricultural use, the EIR will evaluate the potential of the WSP generating facilities to result in land use conflicts with these neighboring agricultural uses.

All of the lands within the WSP site are zoned either "AG-40 (General Agriculture – 40 Acre Min.)" or "AX (Exclusive Agriculture)." Both zoning districts permit solar photovoltaic electrical generating facilities as a conditional use. The EIR will evaluate the consistency of the WSP Master Plan and solar development with all applicable Kings County General Plan designations and policies, zoning regulations, and development standards.

The WSP plan area lies partially within the Military Influence Zone (MIA) of Naval Air Station Lemoore. The EIR will evaluate the consistency of the WSP Master Plan with the Joint Land Use Study (JLUS) issued in 2011 by NAS Lemoore in coordination with neighboring jurisdictions.

Henrietta-Gates Transmission Upgrades – The planned upgraded transmission corridor traverses lands in active agricultural cultivation. No portion of the corridor passes over or near existing residential or non-residential structures or agricultural facilities such as dairies. The transmission line would pass over the California Aqueduct and State Route 269 at locations adjacent to existing transmission line crossings. The EIR will evaluate the compatibility of the transmission corridor with ongoing agricultural operations and identify any potential areas of conflict with the neighboring properties. It is expected that agricultural cultivation would continue beneath the overhead transmission lines although there would be some restrictions on agricultural activities such as aerial spraying in proximity to the lines and towers.

Westlands Transmission Corridor – This transmission corridor passes through cultivated agricultural lands and retired farmlands within the Westlands Water District. North of the Fresno-Merced County line, the transmission corridor traverses chaparral covered foothills en route to the Los Banos Substation. No portion of the transmission corridor passes over or near existing residential or non-residential structures or agricultural facilities such as dairies. The corridor passes over several state highways, including I-5, would cross the California Aqueduct in two places. The transmission corridor does not pass over or near any wildlife refuges or other public lands. The EIR will evaluate the compatibility of the corridor alignment with surrounding land uses and address any potential areas of conflict.

Helm-Gregg Transmission Corridor – This transmission corridor passes through predominantly cultivated agricultural lands in Fresno and Madera Counties. The corridor passes between the communities of San Joaquin and Tranquillity, and then passes between the Mendota and Kerman wildlife areas before crossing San Joaquin River into Madera County. In southern Madera County, the corridor stays to the west and north of the rural residential development concentrated north of the river. The corridor crosses over several state highways, including SR-180, SR-145, and SR-99. No portion of the transmission corridor passes over or near existing residential or non-residential structures or agricultural facilities. The EIR will evaluate the compatibility of corridor alignment with surrounding land uses and address any potential areas of conflict.

Noise

WSP Solar Generating Facilities – The WSP solar facilities would result in increased noise levels associated with construction and project operation. During the construction phase, noise sources would be generated by: grading and excavation; construction vehicle traffic; and construction of operation and maintenance facilities, substations, power transmission lines, and roadways. The solar arrays would be supported by metal poles which would be vibration-driven into the ground and would not involve the use of impact pile drivers.

Operational noise sources associated with the solar facilities would include: traffic generated by permanent employees; mechanical noise from solar panel rotation and electrical switching gear; and humming and buzzing associated with substations and high-voltage transmission lines.

The lands surrounding the WSP plan area are very sparsely populated and there are very few noise-sensitive receptors within one mile of the WSP boundaries. The potential impacts upon these receptors will be evaluated by a qualified acoustical consultant. The technical noise study and EIR will address all potential noise impacts associated with the solar facilities, and will identify program-level mitigation measures as appropriate.

Henrietta-Gates Transmission Upgrades – The construction of the transmission upgrades would involve grading for new access roads to tower sites, grading and excavation for tower foundations,

concrete-pours for tower footings, assembly of steel-lattice towers, and pulling and tensioning of cable along the tower line. All of these construction activities would generate noise, and the added movement of equipment and vehicles along access routes would increase traffic noise. The tower construction sites would be relatively small and would be spaced approximately 800 feet apart. There are very few residential receptors in proximity to the corridor that would be subject to transmission construction noise. During operation of the transmission corridor, the low level noise emitted by high voltage lines would be audible for short distances. Maintenance activities along the transmission line would be infrequent and would generate very low levels of noise. The technical noise study and EIR will evaluate the potential noise impacts to the sensitive receptors in the vicinity of the transmission line and identify program-level noise mitigations as appropriate.

Westlands and Helm-Gregg Transmission Corridors – The new transmission corridors would involve very similar construction and operational characteristics as described above for the construction of the Henrietta-Gates transmission upgrades. Both corridor alignments were planned to avoid sensitive residential receptors. The technical noise study and EIR will evaluate the potential noise impacts associated with the transmission corridors and identify program-level mitigation measures as appropriate.

Public Services

WSP Solar Generating Facilities – The primary public services required for the WSP generating facilities include fire protection and police services. Fire protection services would be provided by the Kings County Fire Department from its nearby stations at Stratford to the east, Kettleman City to the south, and Avenal to the southwest of the WSP plan area. There is a low risk of structure fire or wildfire associated with the solar generating facilities, and emergency water supplies would be provided in on-site storage reservoirs for fire-fighting purposes. Although the solar facilities would result in a slight increase in demand for fire services, they are not expected to result in the need for new or expanded fire department facilities.

Police services in the WSP area are provided by the Kings County Sheriff's Department and the California Highway Patrol. The solar generating facilities would include full-time on-site security staff with video monitoring of facilities. Although the solar facilities would result in a slight increase in demand for police services, it is not expected that this would result in the need for new or expanded Sheriff's Department facilities. The EIR will address potential impacts to fire, police, and other potentially affected public services.

Transmission Corridors – The Henrietta-Gates, Westlands, and Helm-Gregg transmission corridors would not result in a significant increase in demand for police or fire services. The Highway Patrol will likely be needed for traffic control during the pulling of transmission cable over I-5 and other state highways, and the Sheriff's Departments of Kings, and Fresno, Merced, and Madera Counties would likely provide traffic control during conductor pulling over county roads. Also, the chaparral covered foothills in the northwestern segment of the Westlands Transmission Corridor would be subject to high fire hazard. The EIR will include discussions of increased demand for these public services associated with the transmission corridors.

Transportation/Circulation

WSP Solar Generating Facilities – The WSP solar facilities will generate traffic during the construction and operational phases. Construction traffic will be generated by: construction workers commuting from the surrounding communities; materials trucks hauling project components from the Bay Area and Southern California; a variety of construction vehicles and semi-trailer trucks hauling major pieces of construction equipment to the WSP site from various off-site locations; and dump

trucks and concrete trucks hauling aggregate and ready-mix concrete from regional sources. Operational traffic will be generated by: permanent employees commuting from surrounding communities; delivery vehicles; maintenance trucks; and materials trucks hauling replacement components and parts to the site.

The analysis of construction and operational traffic impacts will be conducted by a qualified transportation engineering firm. The traffic impact analysis will document existing traffic conditions, and evaluate near-term and far-term impacts. Since construction will be ongoing for several years after the initial phases of solar development are complete, the analysis will consider the combined traffic generated by construction and operational activity during the overlapping period.

Transmission Corridors – The Henrietta-Gates, Westlands, and Helm-Gregg transmission corridors would generate traffic primarily in the construction phases when materials, equipment, and workers would be transported to and from the construction areas. Traffic generation would be relatively light and the focus of activity would move from site to site along the tower lines. Operational traffic would be negligible since it would consist only of occasional travel by staff for periodic inspection and maintenance of the tower lines. The traffic impact study for the WSP solar generating facilities would consider the timing of transmission line construction and factor the added trips into the overall traffic calculations. Special consideration would be given to the potential need for traffic control measures when transmission cables are to be pulled across state highways and county roads, and to accommodate the transportation of oversize loads on the local roadway network.

In addition to the level of service analysis, the traffic study and EIR will make recommendations for traffic control measures, as appropriate, at a programmatic level. The traffic report and EIR may also identify the need for road condition surveys to be undertaken prior to the approval of each solar generating facility in order to provide a baseline for analyzing potential wear and tear by heavy truck and equipment traffic during the construction phases, which would inform the need for remedial roadwork upon completion of the solar generating facilities.

Utilities and Service Systems

The primary utility and service systems that would be required by the solar facilities include water supply, wastewater collection and treatment, and solid waste collection and disposal, as discussed below.

Water Supply and Groundwater

WSP Solar Generating Facilities – Water supply for the solar facilities would be required during both the construction and operational phases. During grading and construction, water would be needed for dust control, cleaning of equipment and vehicles, and domestic use. It is expected that existing on-site agricultural wells would provide non-potable water for non-domestic uses during construction, and that potable water for consumption by construction workers would be provided by bottled water brought to the site.

Operational water demands would be generated by the need for periodic panel washing, general maintenance and landscape irrigation, domestic water consumption by operations and maintenance staff, and stored water supply for fire suppression. It is expected that operational water supply would consist of imported surface water provided through Westlands Water District. In 2011, the WWD Board of Directors established an annual water allocation for solar facilities of up to 5 acre-feet per 160 acres for operational demands from facilities on retired farmland within the District. This allocation would provide for at least four annual panel washings and general maintenance, which is

considered adequate for PV solar operations in the San Joaquin Valley. Therefore, no groundwater would be pumped to support PV solar operations.

The EIR will describe groundwater conditions at the WSP site, and will evaluate the effect of WSP solar facilities on groundwater resources. This discussion will be based on a Water Supply Assessment (WSA), as required under SB 610 for large projects, and under SB 267 for PV solar facilities generating 75 MW or more. The WSA will be prepared by a qualified water resources consultant. Under current conditions, groundwater pumping is required for crop irrigation, especially during dry years when surface water deliveries are substantially curtailed. Under project conditions, the WSP solar facilities would involve groundwater pumping only during the construction phase for dust control and equipment wash down. Upon full buildout of the Westlands Solar Park, groundwater pumping for the solar facilities would cease entirely since the fully operational WSP would rely solely on imported water supply.

Transmission Corridors – The construction of the Henrietta-Gates, Westlands, and Helm-Gregg transmission corridors would require non-potable water primarily for dust control. It is expected that construction water would be provided by tanker trucks which would be filled with water pumped from agricultural wells within the WSP plan area or along the transmission routes. The EIR will include an evaluation of water supply demands from transmission corridor construction.

Wastewater

WSP Solar Generating Facilities – During the construction phases of the solar facilities, domestic wastewater generated by construction workers would be accommodated through the use of portable toilet facilities, with regular cleanout and disposal at an approved site. During operation, the O & M (operations and maintenance) facilities for each solar facility would be served by domestic septic systems and leachfields which would be designed, installed, and maintained in accordance with County requirements. The EIR will include of wastewater disposal during the construction and operational phases of the project.

Transmission Corridors – During construction of the Henrietta-Gates, Westlands, and Helm-Gregg transmission corridors, it is expected that portable toilet facilities would provide wastewater service for construction workers. No permanent employees would be present upon completion of the transmission lines, so permanent wastewater facilities would not be required once the transmission lines are completed.

Solid Waste

WSP Solar Generating Facilities – Solid waste would be generated during construction and operation of WSP generating facilities. The EIR will describe solid waste generation and provisions for collection, recycling, and disposal of construction and operational waste materials, and the potential effects of this solid waste generation upon local landfills.

Transmission Corridors – Solid waste generation from the Henrietta-Gates, Westlands, and Helm-Gregg transmission corridors would occur primarily during construction. The EIR would describe provisions for collection, recycling, and reuse of construction waste.

Cumulative Impacts

The EIR will include an evaluation of potential cumulative impacts related to each environmental category addressed in the EIR. As required under CEQA, the cumulative impact analyses will consider the combined effects of the construction of WSP solar facilities and related transmission lines, and other approved, pending, and reasonably anticipated future projects. For each impact category, the EIR will analyze whether the cumulative impact would be significant, and if so, whether the contribution from WSP development and transmission line construction would be cumulatively considerable, as required under CEQA. The EIR would identify program-level mitigation measures for cumulative impacts where WSP development and/or transmission line construction is determined to potentially result in a considerable contribution to a significant cumulative impact.

Other Checklist Items

Those checklist items contained in Appendix G of the CEQA Guidelines that are determined to have no impact or a negligible level of impact associated with them will be briefly discussed in an EIR chapter entitled "Effects Found Not To Be Significant" as provided under Section 15128 of the CEQA Guidelines. Examples of non-significant impact categories are expected to include: Population and Housing; and Recreation. It is noted that Social and Economic Impacts are not considered to be physical impacts covered by CEQA, unless there is a social or economic impact associated with the project that would indirectly result in an adverse physical environmental impact. The EIR will consider the potential for secondary physical impacts that might arise from any social and economic impacts associated with WSP development or transmission line construction. This approach is prescribed in Section 15131 of the CEQA Guidelines.

Other CEQA-Mandated Analyses

In addition to the topical impact discussions, described above, the EIR will also address the summary analyses required under CEQA, including the following: Alternatives to the Proposed Action; Growth-Inducing Effects; Significant and Unavoidable Impacts; and Significant Irreversible Environmental Changes.

This page intentionally left blank

STATE OF CALIFORNIA

Governor's Office of Planning and Research

State Clearinghouse and Planning Unit

Edmund G. Brown Jr.
Governor

Ken Alex
Director

Notice of Preparation

March 15, 2013

To: Reviewing Agencies

Re: Westlands Solar Park Master Plan and Planned Transmission Facilities
SCH# 2013031043

Attached for your review and comment is the Notice of Preparation (NOP) for the Westlands Solar Park Master Plan and Planned Transmission Facilities draft Environmental Impact Report (EIR).

Responsible agencies must transmit their comments on the scope and content of the NOP, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of the NOP from the Lead Agency. This is a courtesy notice provided by the State Clearinghouse with a reminder for you to comment in a timely manner. We encourage other agencies to also respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

Kiti Buelna
Westlands Water District
3130 N. Fresno Street
PO Box 6056
Fresno, CA 93703

with a copy to the State Clearinghouse in the Office of Planning and Research. Please refer to the SCH number noted above in all correspondence concerning this project.

If you have any questions about the environmental document review process, please call the State Clearinghouse at (916) 445-0613.

Sincerely,

Scott Morgan
Director, State Clearinghouse

Attachments
cc: Lead Agency

Document Details Report
State Clearinghouse Data Base

SCH# 2013031043
Project Title Westlands Solar Park Master Plan and Planned Transmission Facilities
Lead Agency Westlands Water District

Type NOP Notice of Preparation

Description Westlands Solar Park (WSP) Master Plan and Planned Transmission Facilities - Comprises following elements:
1) WSP Generating Facilities - 24,000-acre site planned for 2,400 MW solar PV generating facilities, phased in 200 MW projects.
2) Henrietta to Gates Transmission Upgrades - Construct a second transmission line along existing 230-kV Henrietta-Gates line.
3) Path 15 Transmission Corridor - Upgrade to connect Gates Substation to Los Banos Substation; transmission route diverges from existing transmission corridor near SR 198, runs through interior of Westlands WD, and rejoins corridor at Panoche Substn.
4) Gates to Gregg Transmission Corridor - New transmission route running north from Gates substation and over San Joaquin River where it swings northeast and east through Madera County, then crosses SR-99 on approach to Gregg Substation.

Lead Agency Contact

Name Kiti Buelna
Agency Westlands Water District
Phone 559 241 6226 **Fax**
email
Address 3130 N. Fresno Street
PO Box 6056
City Fresno **State** CA **Zip** 93703

Project Location

County Kings, Fresno, Merced, Madera
City Kettleman, Lemoore
Region
Cross Streets Avenal Cutoff Road and Gale Avenue
Lat / Long 36° 10' 44" N / 119° 57' 16" W
Parcel No. 026-300-032, -033, -038, -043, etc.
Township 20S **Range** 19E **Section** 14-23+ **Base** MDB&M

Proximity to:

Highways Hwy 198, 41, 269, 33, 145, I-5
Airports NAS Lemoore
Railways UPRR, SJVRR
Waterways Kings R., San Joaquin R., Fresno Slough, Cal. Aqueduct
Schools Stratford Grammar School
Land Use Land Use - Agriculture;
Z: AG-40, AX
GPD - Gen. Ag. -40 ac; Excl. Ag. -40ac

Project Issues Aesthetic/Visual; Agricultural Land; Air Quality; Archaeologic-Historic; Biological Resources; Drainage/Absorption; Flood Plain/Flooding; Forest Land/Fire Hazard; Geologic/Seismic; Noise; Publi Services; Septic System; Solid Waste; Soil Erosion/Compaction/Grading; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Quality; Water Supply; Wetland/Riparian; Growth Inducing; Landuse; Cumulative Effects; Other Issues

Reviewing Agencies	Resources Agency; Department of Conservation; California Energy Commission; Central Valley Floo Protection Board; Office of Historic Preservation; Department of Parks and Recreation; Department o Fish and Wildlife. Region 4; Delta Stewardship Council; Delta Protection Commission; Native American Heritage Commission; Public Utilities Commission; State Lands Commission; Caltrans, Division of Aeronautics; California Highway Patrol; Caltrans, District 6; Air Resources Board, Major Industrial Projects; State Water Resources Control Board, Division of Water Quality; Regional Water Quality Control Bd., Region 5 (Fresno)

Date Received	03/15/2013	*Start of Review*	03/15/2013	*End of Review*	04/15/2013

Print Form

Appendix C

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 # 2013031004

Project Title: Westlands Solar Park Master Plan and Planned Transmission Facilities
Lead Agency: Westlands Water District — Contact Person: Kiti Buelna
Mailing Address: 3130 N. Fresno Street, P.O. Box 6056 — Phone: (559) 241-6226
City: Fresno — Zip: 93703-6056 — County: Fresno

Project Location: County: Kings, Fresno, Merced, Madera — City/Nearest Community: Stratford, Kettleman City, NAS Lemoore
Cross Streets: Avenal Cutoff Road and Gale Avenue — Zip Code: 93245
Longitude/Latitude (degrees, minutes and seconds): 36 ° 10 ' 44 " N / 119 ° 57 ' 16 " W Total Acres: ~24,000
Assessor's Parcel No.: 026-300-032,-033,-038,-043, etc. — Section: 14-23+ — Twp.: 20 S — Range: 19 E — Base: MDBM
Within 2 Miles: State Hwy #: 198, 41, 269, 33, 145, I-5 — Waterways: Kings R., San Joaquin R., Fresno Slough, Cal. Aqueduct
Airports: NAS Lemoore — Railways: Union Pacific, SJVRR — Schools: Stratford Grammar Sch

Document Type:

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

RECEIVED
MAR 15 2013
STATE CLEARING HOUSE

Local Action Type:

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

Development Type:

☐ Residential: Units ____ Acres ____
☐ Office: Sq.ft. ____ Acres ____ Employees ____
☐ Commercial: Sq.ft. ____ Acres ____ Employees ____
☐ Industrial: Sq.ft. ____ Acres ____ Employees ____
☐ Educational:
☐ Recreational:
☐ Water Facilities: Type ____ MGD ____
☐ Transportation: Type
☐ Mining: Mineral
☒ Power: Type PV Solar MW 2,400
☐ Waste Treatment: Type ____ MGD ____
☐ Hazardous Waste: Type
☒ Other: Power Transmission Lines and Upgrades

Project Issues Discussed in Document:

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

Present Land Use/Zoning/General Plan Designation:

Land Use - Agriculture; Zoning - AG-40 (Gen. Ag.-40 ac. min.), AX (Excl. Ag.); General Plan - Gen. Ag.- 40 ac.; Excl. Ag.-40 ac.

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

Westlands Solar Park (WSP) Master Plan and Planned Transmission Facilities - Comprises following 4 elements:
1) WSP Generating Facilities - 24,000-acre site planned for 2,400 MW solar PV generating facilities, phased in 200 MW projects.
2) Henrietta to Gates Transmission Upgrades - Construct a second transmission line along existing 230-kV Henrietta-Gates line.
3) Path 15 Transmission Corridor - Upgrade to connect Gates Substation to Los Banos Substation; transmission route diverges from existing transmission corridor near SR 198, runs through interior of Westlands WD, and rejoins corridor at Panoche Substn
4) Gates to Gregg Transmission Corridor - New transmission route running north from Gates substation and over San Joaquin River where it swings northeast and east through Madera County, then crosses SR-99 on approach to Gregg Substation.

Note: The State Clearinghouse will assign identification numbers for all new projects. If a SCH number already exists for a project (e.g. Notice of Preparation or previous draft document) please fill in.

Revised 2010

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".

X	Air Resources Board	X	Office of Historic Preservation
	Boating & Waterways, Department of		Office of Public School Construction
	California Emergency Management Agency		Parks & Recreation, Department of
X	California Highway Patrol		Pesticide Regulation, Department of
X	Caltrans District # 6	X	Public Utilities Commission
X	Caltrans Division of Aeronautics	X	Regional WQCB # 5F
	Caltrans Planning	X	Resources Agency
X	Central Valley Flood Protection Board		Resources Recycling and Recovery, Department of
	Coachella Valley Mtns. Conservancy		S.F. Bay Conservation & Development Comm.
	Coastal Commission		San Gabriel & Lower L.A. Rivers & Mtns. Conservancy
	Colorado River Board	X	San Joaquin River Conservancy
X	Conservation, Department of		Santa Monica Mtns. Conservancy
	Corrections, Department of	X	State Lands Commission
	Delta Protection Commission		SWRCB: Clean Water Grants
	Education, Department of	X	SWRCB: Water Quality
X	Energy Commission		SWRCB: Water Rights
X	Fish & Game Region # 4		Tahoe Regional Planning Agency
X	Food & Agriculture, Department of	X	Toxic Substances Control, Department of
X	Forestry and Fire Protection, Department of	X	Water Resources, Department of
	General Services, Department of		
	Health Services, Department of	X	Other: San Joaquin Valley Air Pollution Control District
	Housing & Community Development		Other:
X	Native American Heritage Commission		

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

Starting Date March 15, 2013 Ending Date April 15, 2013

Lead Agency (Complete if applicable):

Consulting Firm: Verrips Consulting
Address: 11942 Red Hill Avenue
City/State/Zip: Santa Ana, CA 92705
Contact: Bert Verrips
Phone: (714) 838-0192

Applicant: Westside Holdings LLC
Address: 1005 N. Demaree
City/State/Zip: Visalia, CA 93291-4101
Phone: (559) 936-9230

Signature of Lead Agency Representative: [signature] Date: Mar 13, 2013

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

OP Distribution List

County: FRESNO **SCH#** 2013031043

ources Agency

Resources Agency
Nadell Gayou

☐ **Dept. of Boating & Waterways**
Nicole Wong

☐ **California Coastal Commission**
Elizabeth A. Fuchs

☐ **Colorado River Board**
Gerald R. Zimmerman

☑ **Dept. of Conservation**
Elizabeth Carpenter

☑ **California Energy Commission**
Eric Knight

☐ **Cal Fire**
Dan Foster

☑ **Central Valley Flood Protection Board**
James Herota

☑ **Office of Historic Preservation**
Ron Parsons

Dept of Parks & Recreation
Environmental Stewardship Section

☐ **California Department of Resources, Recycling & Recovery**
Sue O'Leary

☐ **S.F. Bay Conservation & Dev't. Comm.**
Steve McAdam

☐ **Dept. of Water Resources Resources Agency**
Nadell Gayou

h and Game

☐ **Dept. of Fish & Wildlife**
Scott Flint
Environmental Services Division

☐ **Fish & Wildlife Region 1**
Donald Koch

☐ **Fish & Wildlife Region 1E**
Laurie Harnsberger

☐ **Fish & Wildlife Region 2**
Jeff Drongesen

☐ **Fish & Wildlife Region 3**
Charles Armor

☑ **Fish & Wildlife Region 4**
Julie Vance

☐ **Fish & Wildlife Region 5**
Leslie Newton-Reed
Habitat Conservation Program

☐ **Fish & Wildlife Region 6**
Gabrina Gatchel
Habitat Conservation Program

☐ **Fish & Wildlife Region 6 I/M**
Brad Henderson
Inyo/Mono, Habitat Conservation Program

☐ **Dept. of Fish & Wildlife M**
George Isaac
Marine Region

Other Departments

☐ **Food & Agriculture**
Sandra Schubert
Dept. of Food and Agriculture

☐ **Depart. of General Services**
Public School Construction

☐ **Dept. of General Services**
Anna Garbeff
Environmental Services Section

☐ **Dept. of Public Health**
Jeffery Worth
Dept. of Health/Drinking Water

☑ **Delta Stewardship Council**
Kevan Samsam

Independent Commissions,Boards

☑ **Delta Protection Commission**
Michael Machado

☐ **Cal EMA (Emergency Management Agency)**
Dennis Castrillo

■ **Native American Heritage Comm.**
Debbie Treadway

☑ **Public Utilities Commission**
Leo Wong

☐ **Santa Monica Bay Restoration**
Guangyu Wang

☑ **State Lands Commission**
Jennifer Deleong

☐ **Tahoe Regional Planning Agency (TRPA)**
Cherry Jacques

Business, Trans & Housing

☑ **Caltrans - Division of Aeronautics**
Philip Crimmins

☐ **Caltrans - Planning**
Terri Pencovic

☑ **California Highway Patrol**
Suzann Ikeuchi
Office of Special Projects

☐ **Housing & Community Development**
CEQA Coordinator
Housing Policy Division

Dept. of Transportation

☐ **Caltrans, District 1**
Rex Jackman

☐ **Caltrans, District 2**
Marcelino Gonzalez

☐ **Caltrans, District 3**
Gary Arnold

☐ **Caltrans, District 4**
Erik Alm

☐ **Caltrans, District 5**
David Murray

☑ **Caltrans, District 6**
Michael Navarro

☐ **Caltrans, District 7**
Dianna Watson

☐ **Caltrans, District 8**
Dan Kopulsky

☐ **Caltrans, District 9**
Gayle Rosander

☐ **Caltrans, District 10**
Tom Dumas

☐ **Caltrans, District 11**
Jacob Armstrong

☐ **Caltrans, District 12**
Marlon Regisford

Cal EPA

Air Resources Board

☐ Airport/Energy Projects
Jim Lerner

☐ Transportation Projects
Douglas Ito

☑ Industrial Projects
Mike Tollstrup

☐ **State Water Resources Control Board**
Regional Programs Unit
Division of Financial Assistance

☑ **State Water Resources Control Board**
Student Intern, 401 Water Quality Certification Unit
Division of Water Quality

☐ **State Water Resouces Control Board**
Phil Crader
Division of Water Rights

☐ **Dept. of Toxic Substances Control**
CEQA Tracking Center

☐ **Department of Pesticide Regulation**
CEQA Coordinator

Regional Water Quality Control Board (RWQCB)

☐ **RWQCB 1**
Cathleen Hudson
North Coast Region (1)

☐ **RWQCB 2**
Environmental Document Coordinator
San Francisco Bay Region (2)

☐ **RWQCB 3**
Central Coast Region (3)

☐ **RWQCB 4**
Teresa Rodgers
Los Angeles Region (4)

☐ **RWQCB 5S**
Central Valley Region (5)

☑ **RWQCB 5F**
Central Valley Region (5)
Fresno Branch Office

☐ **RWQCB 5R**
Central Valley Region (5)
Redding Branch Office

☐ **RWQCB 6**
Lahontan Region (6)

☐ **RWQCB 6V**
Lahontan Region (6)
Victorville Branch Office

☐ **RWQCB 7**
Colorado River Basin Region (7)

☐ **RWQCB 8**
Santa Ana Region (8)

☐ **RWQCB 9**
San Diego Region (9)

☐ **Other** _____

_____

_____

☐ _____
Conservancy

Last Updated 01/08/2013

DEPARTMENT OF TRANSPORTATION
DISTRICT 6
1352 WEST OLIVE AVENUE
P.O. BOX 12616
FRESNO, CA 93778-2616
PHONE (559) 444-2493
FAX (559) 445-5875
TTY (559) 488-4066

Flex your power!
Be energy efficient!

April 5, 2013

2135-IGR/CEQA
06-KIN-41-PM 28.43; NOP-EIR
Westlands Water District Solar Park Project

Ms. Kiti Buelna
Westlands Water District
3130 N. Fresno St.
P.O. Box 6056
Fresno, CA 93703-6056

Dear Ms. Buelna,

The District 6 Office of Traffic Operations has completed its review of the NOP of a Draft EIR for the proposal of approximately 24,000 acres solar generation, operation and transmission facility. The proposed project location is situated in the west-central Kings County and is bounded by SR 198 on the north, SR 41 on the east, and Fresno County line on the west. Based on the statements from the Notice of Preparation of the draft EIR, we have the following comments and recommendations:

Page 22 under "Transportation/Circulation" section: It is requested that the applicant prepares a traffic impact analysis to evaluate the traffic impact/circulation to the State facility near the vicinity of the project during the construction, operation and maintenance phases of the project. Since traffic impact would likely be the heaviest during the construction phases, it is requested that all construction related trips be provided. It is recommended that truck trips be restricted to off traffic peak hours and should be far apart between trips (e.g., 5 minutes apart) during the construction phases. Facility access to/from State Route shall be evaluated and mitigated/ improved if needed. It is suggested that number of access points from/to State Route be limited to reduce potential conflict with public traffic. Roadway mitigation/improvement within the State right of way shall be constructed per Caltrans standard/specifications. According to the Transportation Concept Report (TCR), this segment of SR 41 is designated as a 4-lane conventional highway on a 146 feet right-of-way in the future. It is request that no solar panels or structure of any kind be located within 20 feet from the existing or future right-of-way. A tentative schedule for phases in construction should also be provided in the document.

In addition, an Encroachment Permit must be obtained for all activities for placement of encroachments within, under or over the State Right-of-way, that may include temporary access (during construction) or permanent access from and to Right of Way of State Highways. All new aerial crossing over State Right of Way Highways should be normal (90 Degree) to the highway alignment where practical. New supports (poles) for overhead crossings must be as close to the Right-of-Way line as possible, no poles are allowed in access controlled right of way of Interstate 5, and Highway 99. All installations will be

as per CPUC regulations including clearance requirements. If the applicant does not have a Certificate of Public Convenience and Necessity (CPCN), only a limited number of transversal crossings will be allowed, and the applicant will prove that the properties on both sides of highways belong to the applicant, or arrangements had been made and agreement reached with the current land owners.

Thank you for the opportunity to review this Notice of Preparation. If you have any questions regarding our comments, feel free to contact me at (559) 445-5763.

Sincerely,

David T. Madden

David T. Madden
Associate Transportation Planner
South Branch

Cc: Paul Marquez
Senior Planner, South Branch

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Central Region
1234 East Shaw Avenue
Fresno, California 93710
(559) 243-4005
www.wildlife.ca.gov

EDMUND G. BROWN, JR., Governor
CHARLTON H. BONHAM, Director

April 11, 2013

Kita Buelna
Westlands Water District
3130 North Fresno Street
Fresno, California 93703

Subject: Notice of Preparation (NOP) of a Draft Environmental Impact Report (EIR) Westlands Solar Park Master Plan and Planned Transmission Facilities SCH No. 2013031043

Dear Ms. Buelna:

The California Department of Fish and Wildlife (Department) has reviewed the above NOP of a Draft EIR for the Westlands Solar Park Master Plan and Planned Transmission Facilities (Project) submitted by the Westlands Water District (Lead Agency). Approval of the Project would allow the construction and operation of a 2,400 mega-watt (MW) photovoltaic (PV) solar energy generating facility (Westlands Solar Park, WSP) on approximately 24,000 acres of land, phased in 200-MW (2,000 acre) increments over a period of 12 years; construction of a new transmission line that parallels the existing Henrietta to Gates transmission line for 11 miles; construction of a new transmission line that runs parallel to the existing Central California Transmission Corridor along Interstate 5 for 87 miles to connect the Gates Substation to the Los Banos Substation, diverging for approximately 40 miles to the interior of Westlands Water District land then reconnecting 4 miles south of the Panoche Substation; and construction of a new transmission line from Gates Substation to Gregg Substation (unspecified distance). The solar facility portion of the Project is located south of State Route 198, northwest of State Route 41, and east of the Fresno/Kings County line in unincorporated areas of Kings County, California.

Page 7 of the NOP states that the above described Project will receive program-level environmental review in the EIR. The Department assumes this means that each phase of the Project will have an additional California Environmental Quality Act (CESA) document prepared that includes phase-specific analysis and avoidance, minimization, and mitigation measures.

However, page 11 of the NOP states that the purpose of the Westlands Solar Park Master Plan EIR is to adopt it as a planning framework for the incremental development of the PV generating facility but also to adopt the three proposed transmission routes as the preferred routes. This implies that the EIR will contain a thorough Project description with regard to the transmission corridors, complete analysis to determine the extent of Project-related impacts, and also appropriate avoidance, minimization, and mitigation measures to reduce potential impacts to less than significant levels.

Department Jurisdiction

California Environmental Quality Act (CEQA) Authority: The Department is a Trustee Agency for fish and wildlife resources with the responsibility under CEQA for commenting on projects that could impact fish and wildlife resources. In this role, the Department is responsible for providing, as available, biological expertise to review and comment on environmental documents and impacts arising from project activities. Pursuant to Fish and Game Code Section 1802, the Department has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species.

California Endangered Species Act (CESA) Authority: The Department has regulatory authority over projects that could result in the "take" of any species listed by the State as threatened or endangered pursuant to CESA. If the Project could result in the take of any species listed as threatened or endangered under CESA, the Department may need to issue an Incidental Take Permit (ITP) for the Project. CEQA requires a Mandatory Finding of Significance if a project is likely to substantially impact threatened or endangered species (Sections 21001{c}, 21083, Guidelines sections 15380, 15064, 15065). Impacts must be avoided or mitigated to less than significant levels unless the CEQA Lead Agency makes and supports a Statement of Overriding Consideration (SOC). The CEQA Lead Agency's SOC does not eliminate the Project proponent's obligation to comply with Fish and Game Code Section 2080.

Lake and Streambed Alteration Agreement (LSAA): The Department also has regulatory authority with regard to activities occurring in streams and/or lakes that could adversely affect any fish or wildlife resource, pursuant to Fish and Game Code Section 1600 *et seq.* If the proposed Project would substantially divert water and/or alter the bed, bank, or channel of a lake and/or stream or associated riparian vegetation, an LSAA Notification would be warranted. The Department is required to comply with CEQA in the issuance or the renewal of an LSAA. Therefore, for efficiency in environmental compliance, we recommend that the CEQA document prepared for this Project describe and propose mitigation for any Project activities under the Department's regulatory authority under Fish and Game Code Section 1600 *et seq.* This would reduce the need for the Department to require extensive additional environmental review for an LSAA for this Project in the future. For additional information on notification requirements, please contact our staff in the Lake and Streambed Alteration Program at (559) 243-4593.

Fully Protected Species: The Department has jurisdiction over fully protected species of birds, mammals, amphibians and reptiles, and fish pursuant to Fish and Game Code Sections 3511, 4700, 5050, and 5515. Take of any fully protected species is prohibited and the Department cannot authorize their take.

Bird Protection: The Department has jurisdiction over actions which may result in the disturbance or destruction of active nest sites or the unauthorized take of birds. Sections of the Fish and Game Code that protect birds, their eggs and nests include sections 3503 (regarding unlawful take, possession or needless destruction of the nest or eggs of any bird), 3503.5

(regarding the take, possession or destruction of any birds-of-prey or their nests or eggs), and 3513 (regarding unlawful take of any migratory nongame bird).

Water Quality Protection: Pursuant to Fish and Game Code Section 5650, it is unlawful to deposit in, permit to pass into, or place where it can pass into a "Waters of the State" any substance or material deleterious to fish, plant life, or bird life. Additionally, Fish and Game Code Section 5652 prohibits the deposition of any cans, bottles, garbage, motor vehicle or parts thereof, or rubbish within 150 feet of the high water mark of the "Waters of the State" (or where they can pass in to any "Waters of the State").

General Comments

Because of the size of the Westlands Solar Park and the extent of the transmission lines, wildlife species have the potential to be impacted during implementation of the Project. The Department recommends that the Lead Agency conduct a biological assessment to determine what habitat types, vegetation communities, and wetlands exist within the entire Project footprint and in the Project vicinity. The biological assessment would provide a baseline on wildlife potentially impacted through construction, operation, maintenance, and decommissioning activities and provide avoidance, minimization, and mitigation measures to be included in the EIR.

Page 15 of the NOP states that biological surveys were conducted throughout the Westlands Solar Park area. The Department recommends including the results of these surveys as an appendix in the EIR. Depending on when these surveys were conducted and the results, additional survey efforts may be appropriate.

To ensure that potential Project impacts are adequately identified and addressed, the Department recommends the Lead Agency conduct additional site-specific biological assessments and subsequent species-specific surveys when findings during the biological assessments indicate that such surveys are warranted throughout the transmission line corridors and within the Westlands Solar Park area as necessary. Conduct species-specific surveys (if they have not already been conducted) according to Department-accepted protocols, which can be found at our website at http://www.dfg.ca.gov/wildlife/nongame/survey_monitor.html. If our website does not contain a survey protocol for a particular species, the Department recommends the Lead Agency submit a proposed protocol to the Department and/or the United States Fish and Wildlife Service (USFWS) for review and approval prior to implementation.

Conversion from agricultural lands to solar facilities has the potential to displace wildlife species and impact foraging opportunities. In perpetuity habitat conservation should be included as a mitigation measure in the EIR or other CEQA documents prepared for each phase of the Project where the conversion of agricultural lands to solar results in potentially significant impacts. In many cases, conservation of comparable agricultural land would be appropriate.

The Department recommends including the following general mitigation measures in the EIR and any subsequent CEQA documents prepared for individual phases.

1. Restrict outdoor lighting except as necessary for safety.

2. Require that all lights be shielded, pointed downward, and directed away from adjacent habitat.

3. Require motion sensor-type nighttime lighting so that the lights do not stay on constantly and interfere with nocturnal wildlife activities.

4. Install perimeter fencing so that the bottom of the fence is 5 to 7 inches above the ground surface and knuckled under to create a smooth edge to allow for unimpeded movement of wildlife through the project sites. This will help avoid wildlife connectivity issues posed by this large scale solar Project.

5. Require that all vertical pipes associated with solar mounts or chain-link fencing be capped at the time of installation to prevent entrapment and death of birds.

6. Prohibit the use of rodenticides. If rodenticide use is allowed, obtain an ITP from the Department for listed species such as San Joaquin kit fox (*Vulpes macrotic mutica*, SJKF), Swainson's hawk (*Buteo swainsoni*, SWHA), and any other State-listed species known to occur in the Project site's vicinity before starting rodenticide use.

Thank you for the opportunity to provide input on the NOP for this renewable energy project. If you have any questions regarding these comments, please contact Lisa Gymer, Staff Environmental Scientist, at the address on this letterhead, by telephone at (559) 243-4014, extension 238, or by electronic mail at lisa.gymer@wildlife.ca.gov.

Sincerely,

Jeffrey R. Single, Ph.D.
Regional Manager

cc: See Page Five

cc: Thomas Leeman
United States Fish and Wildlife Service
Sacramento Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825

Debra Mahnke
Regional Water Quality Control Board
1685 E Street, Suite 100
Fresno, California 93706

State Clearinghouse
Post Office Box 3044
Sacramento, California 95812-3044

ec: California Department of Fish and Wildlife
William Condon, Climate Science and Renewable Energy Branch
Stuart Itoga, Climate Science and Renewable Energy Branch
Julie Vance, Central Region
Lisa Gymer, Central Region

CALIFORNIA STATE LANDS COMMISSION
100 Howe Avenue, Suite 100-South
Sacramento, CA 95825-8202

JENNIFER LUCCHESI, *Executive Officer*
(916) 574-1800 FAX (916) 574-1810
California Relay Service From TDD Phone **1-800-735-2929**
from Voice Phone **1-800-735-2922**

Contact Phone: **(916) 574-1900**
Contact FAX: **(916) 574-1885**

April 15, 2013

File Ref: SCH # 2013031043

Kiti Buelna
Westlands Water District
3130 N. Fresno Street
PO Box 6056
Fresno, CA 93703

Subject: Notice of Preparation (NOP) for a Programmatic Environmental Impact Report (PEIR) for the Westlands Solar Park Master Plan and Planned Transmission Facilities, Kings, Fresno, Merced and Madera Counties

Dear Ms. Buelna:

The California State Lands Commission (CSLC) staff has reviewed the subject NOP for a PEIR for the Westlands Solar Park Master Plan and Planned Transmission Facilities (Project), which is being prepared by the Westlands Water District. The Westlands Water District, as a public agency proposing to carry out a project, is the lead agency under the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.). The CSLC is a trustee agency because of its trust responsibility for projects that could directly or indirectly affect sovereign lands, their accompanying Public Trust resources or uses, and the public easement in navigable waters. Additionally, because the Project involves work on sovereign lands, the CSLC will act as a responsible agency.

CSLC Jurisdiction and Public Trust Lands

The CSLC has jurisdiction and management authority over all ungranted tidelands, submerged lands, and the beds of navigable lakes and waterways. The CSLC also has certain residual and review authority for tidelands and submerged lands legislatively granted in trust to local jurisdictions (Pub. Resources Code, §§ 6301, 6306). All tidelands and submerged lands, granted or ungranted, as well as navigable lakes and waterways, are subject to the protections of the Common Law Public Trust.

As general background, the State of California acquired sovereign ownership of all tidelands and submerged lands and beds of navigable lakes and waterways upon its admission to the United States in 1850. The State holds these lands for the benefit of all people of the State for statewide Public Trust purposes, which include but are not limited to waterborne commerce, navigation, fisheries, water-related recreation, habitat preservation, and open space. On navigable non-tidal waterways, including lakes, the State holds fee ownership of the bed of the waterway landward to the ordinary low

water mark and a Public Trust easement landward to the ordinary high water mark, except where the boundary has been fixed by an agreement or a court. Such boundaries may not be readily apparent from present day site inspections.

Please be advised that if the proposed Project activities within and crossing over the river channel of the Kings River, San Joaquin River, and Fresno Slough involve sovereign lands under the jurisdiction of the CSLC, a lease from the CSLC will be required. However, since the NOP does not include project-specific details, CSLC staff is unable to determine exactly where the CSLC's jurisdiction lies with respect to the Project at this time. CSLC staff, therefore, requests the following.

- Please provide more information on the exact location of the proposed transmission lines over the Kings River, San Joaquin River, and Fresno Slough so that CSLC staff can determine the extent of the CSLC's jurisdiction. Specifically, please provide a comprehensive Project overview of where specific activities will occur to CSLC staff, particularly in relation to any river crossings, when these details become available. Additionally, as the Project proceeds, please submit additional information, including detailed maps, to enable CLSC staff to determine which components of the Project will require a lease or permit.
- Since the transmission line crossing of the San Joaquin River will require a lease, CSLC staff requests to be added to the list of "Approvals Required from Public Agencies" in the PEIR.
- Please place CSLC staff on any future distribution mailing list for the Project.

These comments are made without prejudice to any future assertion of State ownership or public rights, should circumstances change, or should additional information become available. This letter is not intended, nor should it be construed as a waiver or limitation of any right, title, or interest of the State of California in any lands under its jurisdiction.

Project Description

The Westlands Water District proposes to adopt the: (1) Westlands Solar Park Master Plan, (2) Henrietta-Gates Transmission Upgrade, (3) Westlands Transmission Corridor and (4) Helm-Gregg Transmission Corridor to meet the District's objectives and needs as follows:

- Retire the Westlands Solar Project site from irrigated agriculture, and provide economically viable and environmentally beneficial use of the site's physically impaired soils;
- Provide a comprehensive and cohesive document to guide and facilitate the beneficial reuse of drainage-impaired lands through developing renewable energy generation in the Westlands Competitive Renewable Energy Zone;
- Establish preferred transmission corridor routes through the district to best facilitate the economic development of drainage-impaired lands.

From the Project Description, CSLC staff understands that the Project would include the following components:

- Westlands Solar Park. The Westlands Solar Park consists of developing approximately 24,000 acres in west-central Kings County for a utility-scale solar energy generation facility that would include photovoltaic solar arrays and associated electrical equipment, interconnections, support facilities, substations, and other utilities infrastructure. Total electrical generating capacity is expected to be 2,400 Megawatts;
- Henrietta to Gates Transmission Upgrades. Planned upgrades involve construction of a new 230 kilovolt (kV) transmission tower line running parallel to the existing transmission corridor;
- Westlands Transmission Corridor. The planned transmission corridor would involve construction of an 87 mile, 500 kV transmission line running generally parallel to the existing transmission corridor from the Gates Substation to the Los Banos Substation;
- Helm to Gregg Transmission Corridor. This new transmission corridor would branch off the planned Westlands Transmission Corridor at the Helm substation near the city of San Joaquin and run north across the San Joaquin River and then east to the Gregg substation.

Environmental Review

CSLC staff requests that the following potential impacts be analyzed in the PEIR.

General Comments

1. Project Description: The PEIR should include a thorough and complete Project Description in order to facilitate meaningful environmental review of potential impacts, mitigation measures, and alternatives. The Project Description should be as precise as possible in describing the details of all allowable activities (e.g., types of equipment or methods that may be used, maximum area of impact or volume of sediment removed or disturbed, seasonal work windows, locations for material disposal, etc.), as well as the details of the timing and length of activities. Thorough descriptions will facilitate CSLC staff's determination of the extent and locations of its leasing jurisdiction, make for a more robust analysis of the work that may be performed, and minimize the potential for subsequent environmental analysis to be required for project activities involving river crossings.

2. Programmatic Document: Because the Project is being proposed as a "Programmatic" rather than a "Project-level" EIR, the CSLC expects the Project will be presented as a series of distinct but related sequential activities (i.e., construction of the Westlands Solar Park, construction of the Henrietta to Gates transmission corridor, etc). State CEQA Guidelines,[1] section 15168, subdivision (c)(5) states that a program EIR will be most helpful in dealing with subsequent activities if it deals with the effects of the program as specifically and

[1] The State "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with section 15000.

comprehensively as possible. The PEIR should make an effort to distinguish what activities and their mitigation measures are being analyzed in sufficient detail to be covered under the PEIR without additional project specific environmental review, and what activities will trigger the need for additional environmental analysis (See State CEQA Guidelines, § 15168, subd.(c)).

3. Deferred Mitigation: In order to avoid the improper deferral of mitigation, mitigation measures should either be presented as specific, feasible, enforceable obligations, or should be presented as formulas containing "performance standards which would mitigate the significant effect of the project and which may be accomplished in more than one specified way" (State CEQA Guidelines, §15126.4, subd. (b)).

Biological Resources

4. Sensitive Species: The Westlands Water District should conduct queries of the California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDB) and U.S. Fish and Wildlife Service's (USFWS) Special Status Species Database to identify any special-status plant or wildlife species that may occur in the Project area. However, these queries alone should not be used as a substitute for coordination with the CDFW and USFWS, as well as direct surveys or data collection. The Westlands Water District should also consult directly with CDFW, USFWS, and possibly the and the National Oceanic and Atmospheric Administration's Fisheries Service (NMFS or NOAA Fisheries) for information on species that may be present, their life histories, and possible mitigation for any significant impacts. The PEIR should use this information to analyze the potential for such species to occur in the Project area, particularly the riparian and freshwater areas of the San Joaquin River, the Kings River, and the Fresno Slough. If impacts to special-status species are found to be significant, the PEIR should identify adequate mitigation measures.

5. Invasive Species: One of the major stressors in California waterways is introduced species. Therefore, the PEIR should consider the Project's potential to encourage the establishment or proliferation of aquatic invasive species as well as invasive terrestrial plants. Some invasive riparian plants currently along the San Joaquin River include tree of heaven, arundo, edible Fig, himalayan blackberry, perennial pepperweed and yellow starthistle. The CDFW's Invasive Species Program could assist with analyzing the project's potential to spread invasive species as well as with the development of appropriate mitigation (information at http://www.dfg.ca.gov/invasives/).

   In addition, in light of the recent decline of native pelagic organisms and in order to protect at-risk fish species, the PEIR should examine if any elements of the Project (e.g., changes in bankside vegetative cover) would favor non-native fisheries within the San Joaquin River, Kings River, or Fresno Slough.

6. Construction Noise: The PEIR should also evaluate noise and vibration impacts on fish and birds from construction activities involved in the river crossings for the

transmission corridors. Mitigation measures could include species-specific work windows as defined by CDFW, USFWS, and NMFS. Again, staff recommends early consultation with these agencies to minimize the impacts of the Project on sensitive species.

Climate Change

7. Greenhouse Gases: A greenhouse gas (GHG) emissions analysis consistent with the California Global Warming Solutions Act (AB 32) and required by the State CEQA Guidelines should be included in the PEIR. This analysis should identify a threshold for significance for GHG emissions, calculate the level of GHGs that will be emitted as a result of construction and ultimate build-out of the Project, determine the significance of the impacts of those emissions, and, if impacts are significant, identify mitigation measures that would reduce them to less than significant.

Cultural Resources

8. Submerged Resources: The PEIR should evaluate potential impacts to submerged cultural resources near the transmission corridor river crossings. The CSLC maintains a shipwrecks database that can assist with this analysis. CSLC staff requests that the Westlands Water District contact Senior Staff Counsel Pam Griggs at the contact information noted at the end of this letter to obtain shipwrecks data from the database and CSLC records for the Project site. The database includes known and potential vessels located on the State's tide and submerged lands; however, the locations of many shipwrecks remain unknown. Please note that any submerged archaeological site or submerged historic resource that has remained in State waters for more than 50 years is presumed to be significant.

9. Title to Resources: The PEIR should also mention that the title to all abandoned shipwrecks, archaeological sites, and historic or cultural resources on or in the tide and submerged lands of California is vested in the State and under the jurisdiction of the CSLC. CSLC staff requests that the Westlands Water District consult with Senior Staff Counsel Pam Griggs at the contact information noted at the end of this letter, should any cultural resources on state lands be discovered during construction of the proposed Project.

Thank you for the opportunity to comment on the NOP for the Project. As a responsible agency, the CSLC will need to rely on the Final PEIR or subsequent tiered document for the issuance of any new lease for transmission corridor crossings of sovereign land as specified above. Therefore, CSLC staff requests that you consider our comments prior to certification of the PEIR. Please send additional information on the Project to CSLC staff as plans become finalized.

Please send copies of future Project-related documents, including electronic copies of the Final PEIR, Mitigation Monitoring and Reporting Program (MMRP), Notice of Determination (NOD), CEQA Findings and, if applicable, Statement of Overriding

Considerations when they become available, and refer questions concerning environmental review to Holly Wyer, Environmental Scientist, at (916) 574-2399 or via e-mail at holly.wyer@slc.ca.gov. For questions concerning archaeological or historic resources under CSLC jurisdiction, please contact Senior Staff Counsel Pam Griggs at (916) 574-1854 or via email at Pamela.Griggs@slc.ca.gov. For questions concerning CSLC leasing jurisdiction, please contact Randy Collins, Public Land Management Specialist, at (916) 574-0900, or via email at randy.collins@slc.ca.gov.

Sincerely,

Cy R. Oggins, Chief
Division of Environmental Planning
and Management

cc: Office of Planning and Research
Randy Collins, LMD, CSLC
Holly Wyer, DEPM, CSLC
Shelli Haaf, Legal, CSLC

STATE OF CALIFORNIA Edmund G. Brown, Jr., *Governor*

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-6251
(916) 657-5390 - FAX

March 29, 2013

Ms. Kiti Buelna

Westlands Water District
3130 North Fresno Street; P.O. Box 6056
Fresno, CA 93703

RE: SCH# 2013031043 CEQA Notice of Preparation (NOP); draft Environmental Impact Report (DEIR) – "**Westlands Solar Park Master Plan and Planned Transmission Facilities Project**;" located in southwestern Fresno County and western Kings County, California

Dear Ms. Buelna:

The Native American Heritage Commission (NAHC) has reviewed the CEQA Notice regarding the above referenced project. In the 1985 Appellate Court decision (170 Cal App 3rd 604), the court held that the NAHC has jurisdiction and special expertise, as a state agency, over affected Native American resources impacted by proposed projects, including archaeological places of religious significance to Native Americans, and to Native American burial sites.

The California Environmental Quality Act (CEQA) states that any project that causes a substantial adverse change in the significance of an historical resources, which includes archeological resources, is a significant effect requiring the preparation of an EIR (CEQA guidelines 15064(b)). To adequately comply with this provision and mitigate project-related impacts on archaeological resources, the Commission recommends the following actions be required:

Contact the appropriate Information Center for a record search to determine :If a part or all of the area of project effect (APE) has been previously surveyed for cultural resources, which we know that it has. The NAHC recommends that known cultural resources recorded on or adjacent to the APE be listed in the draft Environmental Impact Report.

If an additional archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey. We suggest that this be coordinated with the NAHC, if possible. The final report containing site forms, site significance, and mitigation measurers should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for pubic disclosure pursuant to California Government Code Section 6254.10.
Contact has been made to the Native American Heritage Commission for :a Sacred Lands File Check. A list of appropriate Native American Contacts for consultation

concerning the project site has been provided and is attached to this letter to determine if the proposed active might impinge on any cultural resources. Lack of surface evidence of archeological resources does not preclude their subsurface existence.

Lead agencies should include in their mitigation plan provisions for the identification and evaluation of accidentally discovered archeological resources, per California Environmental Quality Act (CEQA) §15064.5(f). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American, with knowledge in cultural resources, should monitor all ground-disturbing activities.
Lead agencies should include in their mitigation plan provisions for the disposition of recovered artifacts, in consultation with culturally affiliated Native Americans.
Lead agencies should include provisions for discovery of Native American human remains in their mitigation plan. Health and Safety Code §7050.5, CEQA §15064.5(e), and Public Resources Code §5097.98 mandates the process to be followed in the event of an accidental discovery of any human remains in a location other than a dedicated cemetery.

Sincerely,

Dave Singleton
Program Analyst
(916) 653-6251

CC: State Clearinghouse

Attachment: Native American Contacts list

Native American Contacts
Fresno and Kings Counties
March 29, 2013

Big Sandy Rancheria of Mono Indians
Elizabeth Hutchins Kipp, Chairperson
P.O. Box 337 / 37302 — Western Mono
Auberry , CA 93602
ck@bigsandyrancheria.com
(559) 855-4003
(559) 855-4129 Fax

Table Mountain Rancheria
Bob Pennell, Cultural Resources Director
P.O. Box 410 — Yokuts
Friant , CA 93626-0177
(559) 325-0351
(559) 217-9718 - cell
(559) 325-0394 FAX

Cold Springs Rancheria of Mono Indians
Robert Marquez, Chairperson
P.O. Box 209 — Mono
Tollhouse , CA 93667
(559) 855-5043
559-855-4445 - FAX

Kings River Choinumni Farm Tribe
John Davis, Chairman
1064 Oxford Avenue — Foothill Yokuts
Clovis , CA 93612-2211 — Choinumni
(559) 307-6430

Santa Rosa Rancheria
Rueben Barrios Sr., Chairperson
P.O. Box 8 — Tache
Lemoore , CA 93245 — Tachi
(559) 924-1278 — Yokut
(559) 924-3583 Fax

Dunlap Band of Mono Historical Preservation Soc
Mandy Marine, Board Chairperson
P.O Box 18 — Mono
Dunlap , CA 93621
mandy_marine@hotmail.com
559-274-1705

Dumna Wo-Wah Tribal Goverment
Robert Ledger SR., Tribal Chairperson
2216 East Hammond Street — Dumna/Foothill
Fresno , CA 93702 — Mono
ledgerrobert@ymail.com
559-519-1742 - office

Wuksache Indian Tribe/Eshom Valley Band
Kenneth Woodrow, Chairperson
1179 Rock Haven Ct. — Foothill Yokuts
Salinas , CA 93906 — Mono
kwood8934@aol.com — Wuksache
831-443-9702

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed Westlands Solar Park Master Plan and Planned Transmission Facilities Project; located near Kettleman City in southwestern Fresno County and western Kings County, California.

Native American Contacts
Fresno and Kings Counties
March 29, 2013

Santa Rosa Tachi Rancheria
Lalo Franco, Cultural Coordinator
P.O. Box 8
Lemoore , CA 93245
(559) 924-1278 - Ext. 5
(559) 924-3583 - FAX

Tachi
Tache
Yokut

Dumna Wo-Wah Tribal Goverment
Eric Smith, Cultural Resource Manager
2216 East Hammond Street
Fresno , CA 93602
nuem2007@yahoo.com
559-519-1742 - office

Dumna/Foothill
Mono

Dumna Wo-Wah Tribal Goverment
John Ledger, Assistant Cultural Resource Manage
2216 East Hammond Street
Fresno , CA 93602
ledger17bonnie@yahoo.com
559-519-1742 - office

Dumna/Foothill
Mono

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed Westlands Solar Park Master Plan and Planned Transmission Facilities Project; located near Kettleman City in southwestern Fresno County and western Kings County, California.

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING

APR 08 2013

Kiti Buelna
Westlands Water District
3130 N. Fresno Street
Fresno, CA 93703

Project: Westlands Solar Park Master Plan and Related Transmission Facilities

District CEQA Reference No: 20130280

Dear Ms. Buelna:

The San Joaquin Valley Unified Air Pollution Control District (District) has reviewed the Notice of Preparation (NOP) for the Westlands Solar Park Master Plan and Related Transmission Facilities. The proposed project consists of a 2,400 MW solar facility on 24,000 acres with the following three transmission corridors: Henrietta-Gates Transmission Upgrades, Westlands Transmission Corridor, and the Helm to Gregg Transmission Corridor. The District offers the following comments:

Emissions Analysis

1) The District is currently designated as extreme nonattainment for the 8-hour ozone standard, attainment for PM10 and CO, and nonattainment for PM2.5 for the federal air quality standards. At the state level, the District is designated as nonattainment for the 8-hour ozone, PM10, and PM2.5 air quality standards. The District recommends that the Air Quality section of the Environmental Impact Report (EIR) include a discussion of the following impacts:

   a) **Criteria Pollutants:** Project related criteria pollutant emissions should be identified and quantified. The discussion should include existing and post-project emissions.

      i) Construction Emissions: As stated in the NOP, construction emissions are short-term emissions and should be evaluated separate from operational emissions. Construction activities include, but are not limited to, on-site land preparation operations such as trenching, grading, soil import/export, paving, utilities installation, building construction, and architectural coatings; the

Seyed Sadredin
Executive Director/Air Pollution Control Officer

Northern Region
4800 Enterprise Way
Modesto, CA 95356-8718
Tel: (209) 557-6400 FAX: (209) 557-6475

Central Region (Main Office)
1990 E. Gettysburg Avenue
Fresno, CA 93726-0244
Tel: (559) 230-6000 FAX: (559) 230-6061

Southern Region
34946 Flyover Court
Bakersfield, CA 93308-9725
Tel: 661-392-5500 FAX: 661-392-5585

www.valleyair.org www.healthyairliving.com

transport of materials to construction site (on-road heavy duty trucks, etc.); and off-site activities such as installation of new power lines. Equipment exhaust, as well was fugitive dust emissions should be quantified.

The District recommends preparation of an Environmental Impact Report (EIR) if annual construction emissions cannot be reduced or mitigated to below the following levels of significance: 10 tons per year of oxides of nitrogen (NOx), 10 tons per year of reactive organic gases (ROG), or 15 tons per year particulate matter of 10 microns or less in size (PM10).

- *Recommended Mitigation:* To reduce impacts from construction related exhaust emissions, the District recommends feasible mitigation for the project to utilize off-road construction fleets that can achieve fleet average emissions equal to or cleaner than the Tier II emission standards, as set forth in §2423 of Title 13 of the California Code of Regulations, and Part 89 of Title 40 Code of Federal Regulations. This can be achieved through any combination of uncontrolled engines and engines complying with Tier II and above engine standards.

ii) Operational Emissions: Operational emissions are considered long-term emissions. Permitted (stationary) sources, such as backup generators, and non-permitted (mobile) sources, such as employee trips and water trucks used for site maintenance, should be analyzed separately.

The District recommends preparation of an Environmental Impact Report (EIR) if the sum of annual permitted and non-permitted emissions cannot be reduced or mitigated to below the following levels of significance: 10 tons per year of oxides of nitrogen (NOx), 10 tons per year of reactive organic gases (ROG), or 15 tons per year particulate matter of 10 microns or less in size (PM10).

iii) Recommended Model: Project related criteria pollutant emissions should be identified and quantified. Emissions analysis should be performed using CalEEMod (**Cal**ifornia **E**mission **E**stimator **Mod**el), which uses the most recent approved version of relevant Air Resources Board (ARB) emissions models and emission factors. CalEEMod is available to the public and can be downloaded from the CalEEMod website at: www.caleemod.com.

b) **Health Impacts:** Project related health impacts should be evaluated to determine if emissions of toxic air contaminants (TAC) will pose a significant health risk to nearby sensitive receptors. TACs are defined as air pollutants that which may cause or contribute to an increase in mortality or serious illness, or which may pose a hazard to human health. The most common source of TACs can be attributed to diesel exhaust fumes that are emitted from both stationary and mobile sources. Health impacts may require a detailed health risk assessment (HRA).

Prior to conducting an HRA, an applicant may perform a prioritization on all sources of emissions to determine if it is necessary to conduct an HRA. A prioritization is a screening tool used to identify projects that may have significant health impacts. If the project has a prioritization score of 1.0 or more, the project has the potential to exceed the District's significance threshold for health impacts of 10 in a million and an HRA should be performed.

If an HRA is to be performed, it is recommended that the project proponent contact the District to review the proposed modeling approach. The project would be considered to have a significant health risk if the HRA demonstrates that project related health impacts would exceed the District's significance threshold of 10 in a million.

More information on TACs, prioritizations and HRAs can be obtained by:

- E-mailing inquiries to: hramodeler@valleyair.org; or
- Visiting the District's website at:

http://www.valleyair.org/busind/pto/Tox_Resources/AirQualityMonitoring.htm.

2) In addition to the discussions on potential impacts identified above, the District recommends the EIR also include the following discussions:

   a) A discussion of the methodology, model assumptions, inputs and results used in characterizing the project's impact on air quality. To comply with CEQA requirements for full disclosure, the District recommends that the modeling outputs be provided as appendices to the EIR. The District further recommends that the District be provided with an electronic copy of all input and output files for all modeling.

   b) A discussion of the components and phases of the project and the associated emission projections, including ongoing emissions from each previous phase.

   c) A discussion of project design elements and mitigation measures, including characterization of the effectiveness of each mitigation measure incorporated into the project.

   d) A discussion of whether the project would result in a cumulatively considerable net increase of any criteria pollutant or precursor for which the San Joaquin Valley Air Basin is in non-attainment. More information on the District's attainment status can be found online by visiting the District's website at: http://valleyair.org/aqinfo/attainment.htm.

District Rules and Regulations

3) Based on information provided, the proposed project would equal or exceed the relevant District Rule 9510 (Indirect Source Review) applicability threshold of 9,000

square feet. Therefore, the District concludes that the proposed project is subject to District Rule 9510.

Any applicant subject to District Rule 9510 is required to submit an Air Impact Assessment (AIA) application to the District no later than applying for final discretionary approval, and to pay any applicable off-site mitigation fees before issuance of the first building permit. If approval of the subject project constitutes the last discretionary approval by your agency, the District recommends that demonstration of compliance with District Rule 9510, including payment of all applicable fees before issuance of the first building permit, be made a condition of project approval. Information about how to comply with District Rule 9510 can be found online at:

http://www.valleyair.org/ISR/ISRHome.htm.

4) The proposed project may be subject to District rules and regulations, including: Regulation VIII (Fugitive PM10 Prohibitions), Rule 4102 (Nuisance), and Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations). In the event an existing building will be renovated, partially demolished or removed, the project may be subject to District Rule 4002 (National Emission Standards for Hazardous Air Pollutants).

5) The above list of rules is neither exhaustive nor exclusive. To identify other District rules or regulations that apply to this project or to obtain information about District permit requirements, the applicant is strongly encouraged to contact the District's Small Business Assistance (SBA) Office at (559) 230-5888. Current District rules can be found online at the District's website at:

www.valleyair.org/rules/1ruleslist.htm.

The District recommends that a copy of the District's comments be provided to the project proponent. If you have any questions or require further information, please call Angel Lor at (559) 230-5808.

Sincerely,

David Warner
Director of Permit Services

for - Arnaud Marjollet
Permit Services Manager

DW:al

cc: File

KINGS COUNTY
COMMUNITY DEVELOPMENT AGENCY

Gregory R. Gatzka, Director

PLANNING DIVISION

Chuck Kinney, Deputy Director – Planning

Web Site: www.countyofkings.com/planning/index.html

April 8, 2013

Kiti Buelna
Westlands Water District
3130 N. Fresno Street, P.O. Box 6056
Fresno, CA 93703-6056

RE: Notice of Preparation of a Draft Environmental Impact Report for the Westlands Solar Park Master Plan and Related Transmission Facilities Project

Dear Ms. Buelna:

I am writing in response to the Notice of Preparation (NOP) of a Draft Environmental Impact Report (EIR) for the Westlands Solar Park Master Plan and Related Transmission Facilities Project. Comments on the NOP were requested to be submitted by 5:00 P.M. on April 15, 2013. The NOP states that Westlands Water District (District) will be the Lead Agency and will prepare an EIR. The NOP goes on to state that the District needs to know the views of our agency as to the scope and content of the environmental information which is germane to our agency's statutory responsibilities in connection with the proposed project. The NOP also stated that our agency will need to use the EIR prepared by the District when considering our permit or other approval for the project.

The Kings County Community Development Agency (KCCDA) is the land use authority for the unincorporated area of Kings County and a Conditional Use Permit (CUP) would need to be obtained from the KCCDA for the solar generation and transmission projects. An Indemnification and Reimbursement Agreement would also be required.

In order for the KCCDA to be able to rely on the EIR as a Responsible Agency, the KCCDA would need to review and comment on the Administrative Draft EIR prior to circulation of the Draft EIR by the District for public review and comment. All issues identified by the KCCDA would need to be addressed, to the satisfaction of the KCCDA, in order for the KCCDA to be able to rely on the EIR as a Responsible Agency. The CUP would need to be filed with the KCCDA and a deposit would need to be submitted prior to the KCCDA beginning its review and comment on the Administrative Draft EIR. The filing fee for a CUP is $2,530.00. The 2013 California Department Fish and Wildlife (formerly the California Department of Fish and Game) filing fee for an EIR is $2,995.25. The District would be responsible for the KCCDA's full cost of reviewing the EIR and an initial deposit of $10,000.00 would also be required.

If you have any questions concerning this matter, please contact me at (559) 852-2685.

Sincerely,

KINGS COUNTY COMMUNITY DEVLOPMENT AGENCY
Gregory R. Gatzka, Director

Sandy Roper
Principal Planner

h:\planning\land development section\solar photovoltaic\westlands\comments on nop.doc

Subj: **FW: NOP for EIR on Westlands Solar Park and Planned Transmission Corridor**
Date: 4/8/2013 1:04:35 P.M. Pacific Daylight Time
From: kbuelna@westlandswater.org
To: BVerrips@aol.com
FYI

Kiti Buelna, E.I.T.

From: Johnson, Lee [mailto:Lee.Johnson@co.kings.ca.us]
Sent: Monday, April 08, 2013 1:03 PM
To: 'Katarina Buelna'
Subject: RE: NOP for EIR on Westlands Solar Park and Planned Transmission Corridor

Katarina,

Thank you for the opportunity to review this NOP. Our office has the following comments regarding the project:

If hazardous materials at or above threshold reporting quantities (55 gallons of a liquid, 500 pounds of a solid, or 200 cubic feet of a gas) will be kept on site, the facility must file a Hazardous Materials Business Plan online at http://cers.calepa.ca.gov within 30 days of beginning operations. Hazardous materials are broadly defined, and include fuel, lubricants, antifreeze, motor vehicle batteries, welding gases, paints, solvents, glues, agricultural chemicals, transformer fluids, etc. Please contact our office if you require assistance with the online registration process.

Any quantities of hazardous wastes generated by the facility operation must be managed in accordance with Federal, State, and local laws and regulations. Hazardous wastes cannot be disposed of into the municipal waste stream or onsite sewage disposal system. The owner/operator must contact our office at with any questions regarding proper management and reporting of any hazardous wastes associated with this operation.

Any plumbing fixtures, such as hand wash sinks, used by employees for personal use must have bacteriologically safe water. Sinks should be limited to handwashing only and should be posted with signage indicating that the water is suitable for washing and general cleaning, but not recommended for drinking. Bottled water or other potable source must be provided for drinking. If drinking water will be provided to 25 employees or more for 60 days or more over a calendar year, then the facility may require a public water system permit from our office. Portable toilets must be serviced at an adequate frequency so as not to create nuisance conditions.

Three copies of any septic system plans proposed for the site(s) must be submitted to our office for review and approval prior to construction of the system(s).

Given the proximity of LNAS and frequent air traffic over the site, as well as adjacent highway and road traffic, the sites must be designed and constructed so as to minimize light reflectivity that might be hazardous for aircraft or vehicles.

Please contact me if you have any questions.

Sincerely,

Lee

Lee Johnson, MPH, REHS
Environmental Health Officer IV
Kings County Dept. of Public Health
Environmental Health Services Division
330 Campus Dr.
Hanford, CA 93230
Tel: 559-584-1411
Cell: 559-639-3778
Fax: 559-584-6040
Lee.Johnson@co.kings.ca.us
www.countyofkings.com/health/ehs

From: Katarina Buelna [mailto:kbuelna@westlandswater.org]
Sent: Friday, March 15, 2013 2:32 PM
To: Katarina Buelna
Cc: Russ Freeman; Jose Gutierrez
Subject: NOP for EIR on Westlands Solar Park and Planned Transmission Corridor

To Reviewing Agencies and Interested Parties,
Please see the attached Notice of Preparation (NOP) to prepare an Environmental Impact Report (EIR) under the California Environmental Quality Act (CEQA) on the Westlands Solar Park Master Plan and Planned Transmission Corridors. The Westlands Solar Park (WSP) is planned for the Westlands Competitive Renewable Energy Zone (CREZ) located in northwestern Kings County south of SR-198 and west of SR-41. The WSP includes the phased development of utility-scale solar photovoltaic generating facilities with a total capacity of approximately 2,400 MW on about 24,000 acres of drainage-impaired lands in Kings County. The EIR will also address three planned transmission corridors in the region which are intended to facilitate the conveyance of renewable energy in the region.

Kiti Buelna, E.I.T.
Junior Engineer
Westlands Water District
559-241-6226

=

County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
ALAN WEAVER, DIRECTOR

April 12, 2013

Westlands Water District
Kiti Buelna
3130 North Fresno Street
Fresno CA 93793-6056

SUBJECT: Westlands Water District: Notice of Preparation of an Environmental Impact Report for the Westlands Solar Park Master Plan and Related Transmission Facilities

Dear Ms. Buelna:

The County of Fresno appreciates the opportunity to review and comment on Westlands Water District Notice of Preparation of an Environmental Impact Report (EIR) for the Westlands Solar Park Master Plan and Related Transmission Facilities. Based on the County's review of the project, the following comments are offered for your consideration:

Zoning:

- Please note that Westlands Solar Park is considered a private entity that will require an approved Unclassified Conditional use Permit that would address land use, and waiving building height requirements for the transmission lines per our Ordinance Sections attached. Additionally per the California Building Code Section 105.1 the proposed project requires building permits. For additional information, call Zoning at (559) 600-4540.

Williamson Act:

- The DEIR needs to identify the Williamson Act contracted parcels that will be affected by each of the proposed electrical power transmission line easements on a map and list the parcels with their Williamson Act contract number, acreage and soil quality on a table.

- Staff would like to note that Fresno County is not implementing the provision of SB 618 (Solar Easement) that is mentioned on page 14 of the DEIR for areas that will be taken out of Williamson Act contract. Williamson Act restricted land within the proposed electrical power transmission line easements will need to be removed from contract restrictions by cancellation or through eminent domain or the threat of eminent domain.

- Petitions for cancellation of the Williamson Act contracts would need to be completed prior to the property's conversion to a non-agricultural use such as a solar power generation facility.

Sincerely,

Briza Sholars, Planner
Development Services Division

c: Chris Motta, Development Services

SECTION 816

"AE" EXCLUSIVE AGRICULTURAL DISTRICT

The "AE" District is intended to be an exclusive district for agriculture and for those uses which are necessary and an integral part of the agricultural operation. This district is intended to protect the general welfare of the agricultural community from encroachments of non-related agricultural uses which by their nature would be injurious to the physical and economic well-being of the agricultural district.

The "AE" District shall be accompanied by an acreage designation which establishes the minimum size lot that may be created within the District. Acreage designations of 640, 320, 160, 80, 40, 20, 5 are provided for this purpose. Parcel size regulation is deemed necessary to carry out the intent of this District.
(Amended by Ord. 490.38 adopted 11-21-67)

SECTION 816.1 - USES PERMITTED

The following uses shall be permitted in the "AE" Districts, except as otherwise provided in Subsection K of Section 816.2 for Interstate Interchange Impact Areas. All uses shall be subject to the Property Development Standards in Section 816.5
(Amended by Ord. 490.95 adopted 11-27-73; Ord. 490.174 re-adopted 5-8-79)

A. The maintaining, breeding, and raising of livestock of all kinds, except as provided in Sections 816.2 and 816.3.
(Amended by Ord. 490.117 adopted 10-5-76; Ord. T-038-306 adopted 5-22-90)

B. The maintaining, breeding, and raising of poultry of all kinds, subject to the provisions of Section 868.
(Added by Ord. T-038-306 adopted 5-22-90)

C. The raising of tree, vine, field, forage, and other plant life crops of all kinds.
(Amended by Ord. T-077-352, adopted 3-2-04)

D. One family dwellings and accessory buildings and farm buildings of all kinds, when located upon farms and occupied or used by the owner, farm tenant or other persons employed thereon or the non-paying guests thereof; provided, however, that a residence once constructed and used for one of the foregoing uses, and no longer required for such use shall acquire a nonconforming status and may be rented for residential purposes without restriction.

E. Home Occupations, Class I, subject to the provisions of Section 855-N.
(Amended by Ord. T-288 adopted 2-25-86)

F. The harvesting, curing, processing, packaging, packing, shipping, and selling of agricultural products produced upon the premises, subject to the provisions of 855-N.32
(Amended by Ord. T-077-352, adopted 3-2-04).

G. When carried on as a clearly secondary occupation in conjunction with a bona fide agricultural operation, where no more than ten (10) percent of the total land is used and where no more than three (3) persons other than the owner are employed in such activities, and which are owned and operated by the owner or occupant of the premises, any of the following uses:

1. The manufacturing, maintenance, repair, servicing, storage, sale or rental of agricultural machinery, implements and equipment of all kinds.

2. The manufacture, storage or sale of farm supplies of all kinds, including but not limited to fertilizers, agricultural minerals and insecticides.

3. The transportation of agricultural products, supplies or equipment together with the maintenance, storage, repair and servicing of the necessary trucks and equipment therefor.

4. Horticultural and landscaping services, when operated in conjunction with horticultural nurseries.
(Added by Ord. 490.65 adopted 8-4-70)

H. The maintenance of temporary and permanent farm labor camps when carried on as a secondary function in conjunction with a bona fide agricultural operation. The density standards of Section 816.5-C shall not apply.
(Amended by Ord. 490.31 adopted 10-11-66)

I. The use, storage, repair and maintenance of tractors, scrapers, and land leveling and development equipment when operated in conjunction with, or as part of, a bona fide agricultural operation;
(Amended by Ord. 490.117 adopted 10-5-76)

J. Apiaries and honey extraction plants subject to the provisions of Section 855-N.

K. Signs, subject to the provisions of Section 816.5-K.

L. Temporary or permanent telephone booths.

M. Storage of petroleum products for use by the occupants of the premises but not for resale or distribution.

N. Trailer house occupancy consisting of one or more trailers, subject to the provisions of Section 856 and 816.1-C.
(Amended by Ord. 490.18 adopted 12-29-64; Ord. 490.81 adopted 10-24-72)

O. Breeding and personal kennels.
(Added by Ord. 490.36 adopted 7-25-67)

P. Historic and monument sites.
(Added by Ord. 490.117 adopted 10-5-76)

Q. Water-well drilling or pump installation service.
(Added by Ord. 490.117 adopted 10-5-76; amended by Ord. 490.157 adopted 9-19-78)

R. Welding and blacksmith shops and farm equipment and machinery sales, rental storage, and maintenance facilities when in conjunction with welding and blacksmith shops.
(Added by Ord. 490.117 adopted 10-5-76)

S. Value-added agricultural uses and facilities subject to the provisions of Section 855-N.32 and Section 874.
(Added by Ord. T-077-352, adopted 3-2-04)

SECTION 816.2 - USES PERMITTED SUBJECT TO DIRECTOR REVIEW AND APPROVAL
The following uses shall be permitted subject to review and approval as provided for in Section 872.

A. Churches. parsonages and other religious institutions.

B. Commercial stables and riding academies.

C. Communications equipment buildings and microwave relay structures.

D. Electrical transmission substations and electric distribution substations.

E. Commercial specialty animal raising, including fish, fur-bearing animals, wild or undomesticated animals, amphibians, insects and birds for products, numerical increase, or, value increase.
(Amended by Ord. 490.117 adopted 10-5-76)

F. Wineries and distilleries – Small, subject to the provisions of 855-N
(Added by Ord. T-075 adopted 3-25-03)

G. Philanthropic and eleemosynary institutions where agriculture is carried on to a substantial degree.

H. Public schools, private or parochial schools of an elementary or secondary level, colleges, and day nursery large.
(Amended by Ord. 490.188 adopted 10-29-79)

I. Public buildings and yards, fire stations.

J. Sale of food products produced off the premises provided that the sale of such products is incidental and secondary to the sale of agricultural products produced upon the premises when not authorized under Section 816.1-S.
(Added by Ord. 490.2 adopted 7-25-61, Amended by Ord. T-077-352, adopted 3-2-04)

K. Veterinarian offices and animal hospitals.
(Amended by Ord. 490.195 adopted 2-26-80)

L. All uses listed in Section 816.1, except as provided in Subsection B thereof, located within an Interstate Interchange Impact Area identified in Section 816.7.
(Added by Ord. 490.95 adopted 11-27-73)

M. Home Occupations, Class II, subject to the provisions of Section 855-N.
(Added by Ord. T-288 adopted 2-25-86)

N. Off-site directional signs for major recreational uses, hospitals and colleges subject to the criteria set forth in Section 855-K.
(Added by Ord. 490.105 adopted 4-22-75)

O. Farm labor contractor services.
(Added by Ord. 490.117 adopted 10-5-76)

P. Antique sales.
(Added by Ord. 490.117 adopted 10-5-76)

Q. The maintenance and storage of agricultural equipment designed to be used solely for the harvesting of crops, which equipment must be located by the owner thereof upon his own premises when not operated as a secondary occupation in conjunction with, or as part of, a bona fide agricultural operation.
(Added by Ord. 490.117 adopted 10-5-76)

R. Commercial land leveling and development establishments when they are not operated in conjunction with, or as part of, a bona fide agricultural operation.
(Added by Ord. 490.117 adopted 10-5-76)

S. Commercial crop planting, cultivating, and soil preparation service establishments when they are not operated in conjunction with, or as part of, a bona fide agricultural operation.
(Added by Ord. 490.117 adopted 10-5-76)

T. The maintenance and storage of trucks and trailers, when such vehicles are devoted exclusively to the transportation of agricultural products, supplies, and equipment.
(Added by Ord. 490.117 adopted 10-5-76)

U. Temporary mobilehome occupancy subject to the provisions of Section 856 A.1.b.
(Added by Ord. 490.145 adopted 2-14-78; amended by Ord. 490.194 adopted 1-28-80)

V. Dog grooming in conjunction with a single-family residence limited to a maximum of eight dogs per day.
(Added by Ord. 490.146 adopted 2-28-78)

W. Second dwelling units, subject to the provisions of section 855-N.
(Added by Ord. T-269 adopted 5-24-83; amended by Ord. T-280 adopted 12-18-84)

X. The maintaining, breeding, and raising of poultry of all kinds, when not permitted by 816.1-B.
(Added by Ord. T-038-306 adopted 5-22-90)

Y. Existing facilities intended for the commercial storage of agricultural products, equipment, and supplies where such activity is not conducted as a secondary occupation in conjunction with, or part off, a bona side agricultural operation provided that such facilities were legally established with building permits prior to the adoption of this ordinance section.
(Added by Ord. T-057-326 adopted 6-4-96)

SECTION 816.3 - USES PERMITTED SUBJECT TO CONDITIONAL USE PERMIT

The following uses shall be permitted subject to a Conditional Use Permit as provided for in Section 873.

A. Value-added agricultural uses and facilities that are not authorized under Section 816.1-S. This section may also include ancillary uses and facilities that are operated in association with a value-added agricultural processing facility.
(Amended by Ord. 490.155 adopted 9-5-78; Ord. 490.161 adopted 10-2-78; Ord. 490.179 re-adopted 6-26-79, Amended by Ord. T-077-352. adopted 3-2-04)

B. Commercial grain elevators when not operated as a secondary occupation in conjunction with, or as part of, a bona fide agricultural operation.

C. Commercial stock feeding yards and feed lots when not operated as a secondary occupation in connection with, or as part of, a bona fide agricultural operation.

D. Commercial meat processing plants. Such plants may include all phases of meat processing including slaughtering, meatpacking, canning, stuffing, smoking, rendering and hide curing. (Added by Ord. 490.103 adopted 2-18-75; amended by Ord. 490.137 adopted 9-6-77)

E. Community auction and sale yards for sale of farm animals, products, implements, supplies, or equipment.

F. Guest ranches.

G. Mushroom growing.

H. Temporary and permanent farm labor camps that are not carried on as a secondary function in conjunction with a bonafide agricultural operation.
(Amended by Ord. 490.31 adopted 10-11-66)

I. Permanent roadside stands for the sale of agricultural products and the sale of wine to be consumed off the premises in conjunction with and secondary to such roadside stands for the sale of agricultural products.
(Amended by Ord. 490.107 adopted 6-5-75)

J. The sale of beer to be consumed off the premises in conjunction with and secondary to a permanent roadside stand for the sale of agricultural products; that the percentage of beer sales to total roadside stand sales shall be determined as a condition to the Conditional Use Permit.
(Added by Ord. 490.142 adopted 12-6-77)

K. Private use airports, heliports and crop dusting strips.
(Amended by Ord. 490.161 adopted 10-2-78)

L. Sewage disposal and treatment plants.

M. The commercial slaughtering of poultry or rabbits not raised upon the premises.

N. Wineries and distilleries except as provided for in 816.2
(Amended by Ord. T-075-349 adopted 3-25-03)

O. Commercial establishments for the processing, storage, sale, and off-site application of agricultural chemicals, including but not limited to fertilizers, insecticides (flammable and inflammable types) and pesticides.
(Added by Ord. 490.35 adopted 5-16-67)

P. Boarding and training kennels
(Added by Ord. 490.36 adopted 7-25-67)

Q. Horticultural and landscaping services in conjunction with horticultural nurseries, when carried on as a primary use of the property.
(Added by Ord. 490.65 adopted 8-4-70)

R. Off-road vehicle areas consisting of recreational facilities for the driving, testing and racing of motorcycles, trail bikes, 4-wheel drive vehicles, or similar vehicles which are principally designed or commonly used for off-highway recreation purposes. features of such sites may include hill climb areas, race courses, or motor-cross/auto-cross. Such sites shall not be located on land which is productive or potentially productive agricultural land as defined in the General Plan.

(Added by Ord. 490.107 adopted 9-8-75; amended by Ord. 490.125 adopted 12-7-76; and Ord. T-275 adopted 4-24-84)

S. Swine, sheep, or goat feed lots or yards.

T. Commercial dehydration operations.

U. Liquefied petroleum gas distribution and storage, retail.
(Amended by Ord. 490.179 adopted 6-26-79)

V. Feed and farm supply sales.

W. Farm equipment and machinery sales, rental, storage, and maintenance.

X. Irrigation systems administrative offices.

Y. Building materials sales.

Z. Racetracks for non-motorized and motorized vehicles including bicycles, motorcycles, automobiles, and similar vehicles when conducted on land which is not productive or potentially productive agricultural land as defined in the General Plan. Off-road vehicle areas are excluded.
(Added by Ord. No. 490.125 adopted 12-7-76; amended by Ord. No. T-275 adopted 4-24-84)

AA. Swim schools operated in conjunction with a single-family residence with a maximum of fifteen (15) students at one time.
(Added by Ord. 490.143 adopted 1-24-78)

BB. Off-site rock, sand, and gravel trucking operations which may include a newly created parcel size of not less than five acres (See Section 816.5-A.4) on sites located outside the Sphere of Influence of any City or community and not located on productive agricultural land as defined in Section 204-02:3.02a of the General Plan.
(Amended by Ord. No. T-240 adopted 8-17-81; amended by Ord. No. T-033-299 adopted 6-7-88)

CC. Agricultural Commercial center development subject to the provisions of Section 867.
(Added by Ord. T-034-297 adopted 9-20-88)

DD. Assembly of equipment for the post-harvest processing of agricultural products provided such equipment is sold directly to the farmer or processor.
(Added by Ord. T-044-312 adopted 6-30-92)

SECTION 816.4 - USES EXPRESSLY PROHIBITED

The following uses shall be expressly prohibited in the "AE" District. However, enumerating of these prohibited uses shall not by implication enlarge upon the scope of permitted uses specified in Section 816.1, 816.2, and 816.3, above, their enumeration herein being for purposes of clarity only.

A. All manufacturing, service, and commercial uses not specifically permitted in Sections 816.1, 816.2, 816.3, 860, and 867.
(Amended by Ord. 490.60 adopted 4-28-70; amended by Ord. T-034-297 adopted 9-20-88)

B. Advertising structures, except freestanding signs for produce stands.
(Amended by Ord. 490.202 adopted 5-20-80)

C. Art, craft, music, or dancing schools or businesses, professional or trade schools or colleges.

D. Columbaria, crematoriums, and mausoleums.
(Amended by Ord. 490.117 adopted 10-5-76)

E. Residential subdivisions.

F. Truck yards, terminals or facilities unless devoted exclusively to the transportation of agricultural products, supplies and equipment.

G. Sawmills, pulp mills, and similar establishments for the processing of logs, wood, and lumber.

H. Any use that utilizes coal, coke, or other coal-based fuel as an industrial fuel source, excluding blacksmith shops.
(Amended by Ord. T-039-307 adopted 2-26-91)

SECTION 816.5 - PROPERTY DEVELOPMENT STANDARDS

The following property development standards and those in Section 855 shall apply to all land and structures in the "AE" District. For additional lot exceptions in the Sierra-North and Sierra-South Regional Plan areas, see Section 855-A.

A. LOT AREA

1. Each lot shall have a minimum acreage as indicated by the district acreage designation. However, for the purpose of complying with minimum lot area requirements, sections of land containing less than 640 acres shall be deemed to be equivalent to 640 acres. Parcels resulting from the division of sections with less than 640 acres into units of 1/2, 1/4, 1/8, 1/16, or 1/32 of said section shall also be deemed to be equivalent to the corresponding and respective lot areas required by the acreage designations (320, 160, 80, 40, or 20) of the AE District. The acreage shall be measured from the center of any abutting roadway, stream, railroad, or other public right-of-way that serve as a boundary line.

   A nonconforming lot of record under separate ownership at the time it became nonconforming may be used for or occupied by any use permitted in this District. An existing parcel of land under one ownership, when divided by a developed public right-of-way in such a manner that one or both portions of the parcel are substandard as a lot area, shall be considered as two separate lots under the provisions of this Section.
   (Amended by Ord. 490.117 adopted 10-5-76; Ord. 490.132 adopted 5-27-77, Amended by Ord. T-248 adopted 9-16-80; Amended by Ord. T-068-344 adopted 4-23-02)

2. The creation of homesites less than the minimum acreage indicated by the District acreage designation, but not greater than 2.5 gross acres (5 gross acres in the Sierra-North and Sierra-South Regional Plan areas designated Eastside Rangeland) may be permitted in the Exclusive Agricultural Zone District, excluding the AE-5 Zone District, subject to the following criteria:
   (Amended by Ord. 490.172 adopted 4-24-79)

   a. The minimum lot size shall be 60,000 square feet of gross area (two (2) acres in the Sierra-North and Sierra-South Regional Plan areas) as measured from the center of any abutting roadway, stream, railroad, or other public right-of-way forming a

boundary line, except that a lesser area shall be permitted when the owner submits evidence satisfactory to the Health Officer that the soils meet the California Regional Water Quality Control Board guidelines for liquid waste disposal, but in no event shall the lot be less than one (1) gross acre; and

b. One of the following conditions exist:

(1) The lot is to be created by the conveyance of a security instrument to finance a single family residence to be occupied by the owner thereof where the existing lot before division is not less than twenty (20) gross acres; that said lot, together with the remaining acreage, shall not be separately conveyed or devised without meeting the district acreage designation, except for the purpose aforesaid, unless such division occurs by judicial foreclosure, trustee's sale or other legal proceedings which discharge the lien of the security instrument. (Amended by Ord. 490.132 adopted 5-25-77; amended by Ord. T-067-338 adopted 6-26-01)

(2) The lot or lots to be created are intended as a conveyance or devise exclusively for use by a person related to the owner by adoption, blood, or marriage within the second degree of consanguinity and only for persons involved in the farming operation; the existing lot before division contains a minimum of twenty (20) gross acres; there is only one (1) lot per related person, or per related married couple, and there is no more than one lot per each twenty (20) gross acres, or
(Amended by Ord. 490.132 adopted 5-24-77; amended by Ord. T-067-338 adopted 6-26-01)

(3) Outside of the Sierra-North and Sierra-South Regional Plan areas, the present owner owned the property prior to adoption of the Exclusive Agricultural Zone District and wishes to retain his homesite and sell the remaining acreage for agricultural purposes where the remaining acreage is not less than fifteen (15) acres, or
(Amended by Ord. 490.132 adopted 5-24-77)

(4) Outside of the Sierra-North and Sierra-South Regional Plan areas, a homesite is to be retained from an existing lot of less than fifteen (15) acres with the remaining acreage to be added to an abutting lot, which with the addition will have a total lot size of at least fifteen (15) acres, and is to be used for agricultural purposes, or

(5) The lot to be created is intended as a life estate.

(6) In the Sierra-North and Sierra-South Regional Plan areas the present owner owned the property at the time of Plan adoption (May 4, 1982, for Sierra-North, September 25, 1984 for Sierra-South), and wishes to retain his homesite and sell the remaining acreage for agricultural purposes where the acreage exceeded 15 acres.

c. Each homesite created pursuant to Section 816.5-A.2b(2)(3)(4) and (6) shall be subject to execution of a Declaration of Intent and Acknowledgement of Penalty for Unlawful Conveyance.
(Added by Ord. T-067-338 adopted 6-26-01)

d. Creation of homesites listed above excepting those for financing purposes or life estates shall not be permitted in addition to the divisions permitted pursuant to Section 855A-5.c. and 855A-6.b.
(Sec. 816.5-A.2 added by Ord. 490.117 adopted 10-5-76; amended by Ord. T-265 adopted 11-16-82; Ord. T-025-281 adopted 6-25-85; Ord. T-067-338 adopted 6-26-01)

3. The creation of lots less than the minimum parcel size of the zone district, but not less than five (5) acres, may be considered as a part of the Conditional Use Permit for off-site rock, sand, and gravel trucking operations.
(Amended by Ord. 490.198 adopted 4-21-80; Ord. No. T-033-299 adopted 6-7-88; and Ord. T-067-338 adopted 6-26-01)

4. All parcels approved for creation through the former Agricultural Assessment process shall be deemed conforming and all legally created parcels shall not merge.
(Added by Ord. T-275 adopted 4-24-84)

5. Despite any other provision of this Division, all parcels not in compliance with 816.5-A.2b shown on map applications accepted for processing prior to the effective date of this provision (August 1, 2001), shall upon subsequent recordation of the map and/or certificate be deemed conforming.
(Added by Ord. T-067-338 adopted 6-26-01)

B. LOT DIMENSIONS

1. No requirements for lots greater than five (5) acres in size or parcels created for financing purposes. The provisions of the "RR" District, Section 820.5B, shall apply for all lots less than five (5) acres in size. Public road frontage shall not be required for lots created by Subsection A.2.b.(3), (4), and (5) of this Section from an existing landlocked parcel.
(Amended by Ord. 490.117 adopted 10-5-76; Ord. T-011-265 adopted 11-16-82)

2. The ratio of lot depth to lot width shall not exceed four (4) to one (1) for lots created by Section 816.5-A.3.
(Added by Ord. 490.172 re-adopted 4-24-79)

C. POPULATION DENSITY

1. Not more than one (1) residence may be constructed or placed upon a parcel of land which is less than five (5) acres in size in the AE-5 District, less than twenty (20) acres in size in the AE-20 District, and less than forty (40) acres in size in the AE-40 District through the AE-640 District, except that one of the following may be permitted:
(Added by Ord. T-067-338 adopted 6-26-01)

   a. A temporary mobilehome, subject to the provisions of Section 816.2.

   b. A second dwelling unit, subject to the provisions of Section 816.2.
   (Amended by Ord. T-269 adopted 5-24-83)

   c. Residential uses subject to the provisions of Section 867.
   (Added by Ord. T-034-297 adopted 9-20-88).

2. Not more than one (1) additional residence may be constructed or placed upon a parcel of land for each five (5) acres in excess of five (5) acres in the AE-5 District, each twenty (20)

acres in excess of twenty (20) acres in the AE-20 District, and each forty (40) acres in excess of forty (40) acres in the AE-40 through the AE-640 District.
(Added by Ord. T-067-338 adopted 6-26-01)

3. Each homesite created pursuant to Section 816.5-A.2b (2) shall reduce by one (1) the number of residential units otherwise authorized on the remainder parcel created from the original parcel. The remainder parcel shall be entitled to no less than one residential unit.
(Added by Ord. T-067-338 adopted 6-26-01)

4. Despite any other provision of this Division, all residences authorized for construction for which an application was accepted for processing prior to the effective date of this provision (August 1, 2001) that exceed the density standards herein, shall be deemed conforming and not subject to the provisions of Section 876 (Nonconforming buildings and Uses).
(Added by Ord. T-067-338 adopted 6-26-01)

D. BUILDING HEIGHT

No building may exceed thirty-five feet (35) feet in height. If the building exceeds two (2) stories, an emergency exit (door or window no less than two (2) feet wide and having a minimum area of six (6) square feet) shall be provided to the uppermost story no more than twenty-eight (28) feet above the finished grade below the opening. Non-dwelling structures and other accessory farm buildings are excepted.
(Amended by Ord. T-243 adopted 7-28-80)

E. YARDS

1. General Yard Requirements

a. All required yards shall extend the full width or depth of the lot and shall be open from the ground to the sky, except as provided for below.

b. Swimming Pools

(1) Swimming pools shall not be located in any required front yard or side yard and its projection to the rear property line when abutting a street.

(2) Swimming pools shall not be located within five (5) feet of any required front yard setback or within five (5) feet of any required side yard setback and its projection to the rear property line when abutting a street.

(3) Swimming pools may be located in any required interior side yard and rear yard provided a space of not less than five (5) feet is maintained from the side and rear property lines.

(For swimming pool enclosure requirements see "Fences, Hedges, and Walls." Section 816.5-H)
(Amended by Ord. T-245 adopted 4-27-81)

2. Front Yard

Each lot shall have a front yard of not less than thirty-five (35) feet extending across the full width of the lot.

3. Side Yard

a. Each lot shall have a side yard on each side of not less than twenty (20) feet except for special conditions provided for below.

b. Corner Lots

On corner lots, unless otherwise specified in this Division, the side yard abutting the street shall be not less than thirty-five (35) feet in width.

c. Accessory Buildings In Side Yards

(1) Any accessory building located less than one hundred (100) feet from the front property line shall have the same minimum side yard as that required for the main building, regardless of whether or not said accessory building is attached to the main building.

(2) An accessory building may be located on a side property line when said building is located one hundred (100) feet or more from the front property line.

(3) Accessory buildings located in the side yard or its projection to the rear property line when abutting a street shall be at least twenty (20) feet from the property line on the side street.

(4) Any accessory building permitted on a side property line shall have provisions for all roof drainage to remain on the subject lot.
(Amended by Ord. 490.153 adopted 9-5-78)

4. Rear Yard

The provisions of the side yard, Section 816.5-E.3.a, b, and c, shall apply.

5. Exceptions: Permitted Projections Into Required Yards

The provisions of the "R-A" District, Section 821.5-E.5.a through c, shall apply.

F. SPACE BETWEEN BUILDINGS

No animal or fowl pen, coop, stable, barn or corral shall be located within forty (40) feet of any dwelling or other building used for human habitation.
(Amended by Ord. 490.153 adopted 9-5-78)

G. LOT COVERAGE

No requirements.

H. FENCES HEDGES AND WALLS

The provisions of Section 855-H.2 shall apply.
(Added by Ord. 490.123 adopted 12-7-76)

I. OFF-STREET PARKING

1. For value-added agricultural uses and facilities involving retail sales, there shall be at least two (2) square feet of off-street parking area for each one (1) square foot of retail floor space, or fraction thereof.

2. For value-added agricultural uses and facilities, there shall be at least one (1) off-street parking space for each two (2) permanent employees. In addition, there shall be at least one (1) parking space for each truck operated by the concern and one parking space for each sales person permanently employed.

3. The provisions of the General Standards, Section 855-I, shall apply.
(Added by Ord. T- 077-352, adopted 3-2-04)

J. ACCESS

No requirements for lots greater than five (5) acres in size except those lots created by 816.5-A.3. The provisions of the "A-2" District, Section 819.5-J, shall apply for all lots less than five (5) acres in size and those created by 816.5-A.3.
(Amended by Ord. 490.172 re-adopted 4-24-79)

K. OUTDOOR ADVERTISING

1. One (1) non-flashing sign for each street frontage, total area of such sign to contain not more than forty (40) square feet and pertaining only to products for sale upon the premises or services rendered thereon or therefrom, shall be permitted in this District.

2. Name signs shall be permitted but shall display only the following conditions:

   Name signs shall display only the:

   (1) Name of the premises upon which it is displayed;

   (2) Name of the owner, lessee of said premises;

   (3) Address of said premises;

   (4) Nature of the occupation engaged in on said premises.

3. "For Rent" and "For Sale" signs shall be permitted.

4. Signs for institutional uses including churches, hospitals, rest homes, private clubs and similar uses shall be permitted subject to the provisions of Section 855-K.

5. Off-site directional signs for major recreational uses, hospitals, and colleges permitted under Section 816.2 shall be subject to the provisions of Section 855-K.

6. Off-site freestanding signs for produce stands shall be permitted subject to the following conditions:

   a. Produce stand directional signs:

      (1) The number of such signs shall be limited to two per each use, excepting that stands located on properties adjacent to intersections shall be permitted a maximum of four such signs.

(2) Each sign shall not exceed forty (40) square feet in area, exclusive of architectural features. The sign shall not exceed twelve (12) feet in height.

(3) Each sign shall contain only the name and address of the produce stand, a directional arrow, approximate distance to the produce stand, and listing of the produce available for sale, not including the prices thereof.

(4) Internally illuminated or floodlighted signs shall be prohibited, but reflective materials may be used.

(5) The signs shall be located within 2,500 feet of the produce stand structure.

(6) Each sign shall be located a minimum of ten (10) feet from the paved portion of the adjacent road and outside of the public road right-of-way. In no instance shall signs be located within required rear or interior side yards.

(7) Such signs shall be prohibited in corner cut-off areas, the location of which are described in Section 822.5-H.2. For purposes of establishing corner cut-off areas, the property line shall be considered to be not less than thirty (30) feet from the centerline of the adjacent roadway.

(8) Before any sign is erected on any parcel in this District, a Site Plan shall have been submitted to and approved by the Director, pursuant to the provisions of Section 874.

b. Temporary Produce Stand Approach Signs:

(1) The number of such signs shall be limited to two along each public roadway to which the produce stand has direct access.

(2) Each sign shall not exceed sixteen (16) square feet in area, exclusive of architectural features. The sign shall not exceed ten (10) feet in height.

(3) Such signs shall be limited to advertising produce in season and the price thereof.

(4) Internally illuminated or floodlighted signs shall be prohibited, but reflective materials may be used.

(5) The signs shall be located within 1,300 feet of the produce stand structure.

(6) Each sign shall be located a minimum of ten (10) feet from the paved portion of the adjacent road and outside of the public road right-of-way. In no instance shall signs be located within required rear or interior side yards.

(7) Such signs shall be prohibited in corner cut-off areas, the location of which are described in Section 822.5-H.2. For purposes of establishing corner cut-off areas, the property line shall be considered to be not less than thirty (30) feet from the centerline of the adjacent roadway.
(Section 816.5-K.6 added by Ord. 490.202 adopted 5-20-80)

L. LOADING

No loading shall be permitted on a public road, street or highway.

SECTION 816.6 - PERMITS REQUIRED

The establishment of any use in the "AE" District which requires Director Review and Approval or a Conditional Use Permit may be established only after such approval or permit and shall be subject to all restrictions or conditions thereof.
(Amended by Ord. 490.38 adopted 11-21-76; Ord. 490.174 re-adopted 5-8-79)

SECTION 816.7 – INTERSTATE INTERCHANGE IMPACT AREAS

The following areas are determined to be Interstate Interchange Impact Areas and are described as follows:

A. Nees Avenue Highway Interchange Plan Area.

All those portions of Section 28, 29, and 32, T. 12 S., R. 11 E., M. D. B. & M., lying within Fresno County, and Sections 27, 33 and 34, T. 12 S., R. 11 E., M. D. B. & M.

B. Panoche Road Highway Interchange Plan Area.

Sections 1, 2, 11, 12, 13, and 14, T. 15 S., R. 12 E., M. D. B. & M.

C. Derrick Avenue Highway Interchange Plan Area.

Sections 13, 24, and 25, T. 17 S., R. 14 E. M. D. B. & M., and Sections 18, 19, and 30, T. 17 S., R. 15 E., M. D. B. & M.

D. Dorris Avenue Highway Interchange Plan Area.

Sections 20, 21, 22, 27, 28 and 29, T. 19 S., R. 16 E., M. D. B. & M.

E. Jayne Avenue Highway Interchange Plan Area.

Sections 31 and 32, T. 20 S., R. 17 E., M. D. B. & M., and Sections 4, 5, and 6, T. 21 S., R. 17 E., M. D. B. & M.
(Sec. 816.7 added by Ord. 490.95 adopted 11-27-73)
(Sec. 816.8 deleted by Ord. T-275 adopted 4-24-84)

F. Lassen Avenue Highway Interchange Plan Area

All those portions of Sections 24 and 26, T.21 S., R.17E., M.D.B.&M. lying within Fresno County, and Sections 22, 23, and 27 of Town 21, Range 17, M.D.B.&M.
(Added by Ord. T-065-337 adopted 03-27-01)

G. Manning Avenue Highway Interchange Plan Area
Sections 19, 20, 29, and 30, T.15 S., R. 13 E., M. D. B. & M.
(Added by Ord. T-076-350, adopted 11-25-03)

SECTION 853

USES PERMITTED SUBJECT TO CONDITIONAL USE PERMIT

A. CLASSIFIED CONDITIONAL USE PERMITS

Certain uses listed in the districts are permitted only when subject to Conditional Use Permit. Such uses shall be subject to all applicable property development standards of the district in which they are to be located and to the provisions of Section 873.

B. UNCLASSIFIED CONDITIONAL USE PERMITS

In addition, to those uses permitted subject to Classified Conditional Use Permit, the following uses may be permitted by Unclassified Conditional Use Permit except for any use, including a power generating plant, that utilizes coal, coke, or other coal-based fuel as an industrial fuel source, or where expressly prohibited:

(Amended by Ord. T-039-307 adopted 2/26/91).

1. Airport or aircraft landing facilities, provided, however, no review of such permit shall be required in any of the following areas: Section 28, T. 13 S., R. 14 E.; Section 4, T. 15 S., R. 17 E.; Section 21, T. 17 S., R. 17 E.; Section 34. T. 19 S., R. 17 E.; M.D.B. & M.

2. Ambulance substations.

   (Added by Ord. 490.151 adopted 6-20-78)

3. Cemeteries.

4. Convents and rectories when connected with other religious institutions such as schools or churches.

5. Development of natural resources with necessary buildings, apparatus, or appurtenances thereto. For surface mining operation see provisions of Section 858.

   (Amended by Ord. 490.55 adopted 6-17-69; amended by Ord. T-061-332)

6. Golf courses and driving ranges.

7. Governmental facilities.

8. Health spas.

   (Added by Ord. 490.175 re-adopted 5-29-79)

9. Hospitals.

10. Interstate freeways interchange commercial development as identified in Section 860.

    (Added by Ord. 490.95 adopted 11-27-73; amended by Ord. T-066-337 adopted 3-27-01)

11. Oil and gas development uses subject to the provisions of Section 857.

(Amended by Ord. No. T-240 adopted 8-17-81)

12. Parks, including facilities appropriate and incidental to parks.

(Added by Ord. 490.125 adopted 12-7-70; amended by Ord. 490.175 re-adopted 5-29-79)

13. Private clubs and lodges.

(Added by Ord. T-010-267 adopted 10-20-82)

14. Public utility and public services, structures, uses and buildings, except as otherwise provided in this Division.

15. Radio or television antennas and transmitters (commercial).

16. Residential facilities caring for seven or more, subject to the population density standards of Rest Homes (855-N.).

(Added by Ord. T-244 adopted 4-19-83)

17. Rest Homes.

(Amended by Ord. T-244 adopted 4-19-83)

18. Rifle and pistol practice range, skeet field, archery range or other similar place.

19. Solid waste disposal facilities.

(Added by Ord. 490.200 adopted 5-5-80)

20. Solid waste processing facilities.

(Added by Ord. 490.200 adopted 5-5-80)

21. Solid waste transfer stations.

(Added by Ord. 490.200 adopted 5-5-80)

22. Small oil refineries limited to removal of entrained crude oil from natural gas; separation of crude oil into naphtha, kerosene, fuel oil, and diesel oil; blending of naphtha and kerosene to produce jet fuel and gasoline; and reforming of heavy naphtha in the presence of a catalyst to produce unleaded gasoline.

(Added by Ord. 490.136 adopted 9-24-79)

23. Stadia.

Calif. Building Code

105.1

Def. of A Structure

INTER OFFICE MEMO

Fresno County Public Library

Date: March 25, 2013

To: Kiti Buelna

From: Laurel Prysiazny, County Librarian

Subject: Westlands Solar Park Master Plan and Related Transmission Facilities.

Pursuant to the Requirements of the California Environmental Quality Act (CEPA).

Previous Atlas indicates property was in Kings County, Fresno County border.
Thompson, Thos. H. 1891, *Atlas of Fresno County California.*
Harvey, William Sr., 1907, *Atlas of Fresno County California.*
Progressive Map Service, 1935, *Progressive Atlas of Fresno County.*

Vacant lot, no buildings exist on the Fresno County side, no impact on any historic properties within the affected area.

**If upon construction and digging there are any archaeological findings, they should not be disturbed until the right authorities are contacted.

CHIEF EXECUTIVE OFFICE

Monica Nino
Chief Executive Officer

Patricia Hill Thomas
Chief Operations Officer/
Assistant Executive Officer

Stan Risen
Assistant Executive Officer

Keith D. Boggs
Assistant Executive Officer

1010 10th Street, Suite 6800, Modesto, CA 95354
Post Office Box 3404, Modesto, CA 95353-3404

STANISLAUS COUNTY ENVIRONMENTAL REVIEW COMMITTEE

April 11, 2013

Kiti Buelna
Westlands Water District
3130 N. Fresno Street
PO Box 6056
Fresno, CA 93703

SUBJECT: ENVIRONMENTAL REFERRAL – WESTLANDS WATER DISTRICT – WESTLANDS SOLAR PARK MASTER PLAN AND RELATED TRANSMISSION FACILITIES

Ms. Buelna:

The Stanislaus County Environmental Review Committee (ERC) has reviewed the subject project and has no comments at this time.

The ERC appreciates the opportunity to comment on this project.

Sincerely,

Mark E. Loeser

Mark Loeser, Management Consultant
Environmental Review Committee

ML:ss

cc: ERC Members

James Chuang
Environmental Specialist/Land Planner

Natural Resources & Land Planning
Mail Location GT17E2
555 W. Fifth Street
Los Angeles, CA 90013-1036

Tel: 213.244.5817
Fax: 323.518.2324
E-mail : WCChuang@semprautilities.com

April 11, 2013

Ms. Kiti Buelna
Resource Division
Westlands Water District
3130 N. Fresno Street, P.O. Box 6056
Fresno, CA 93703

Re: **Westlands Solar Park Master Plan and Related Transmission Facilities**

Dear Ms. Buelna:

Southern California Gas Company (SCG) appreciates the opportunity to review and respond to the Project's Notice of Preparation of a Draft Environmental Impact Report. We respectfully request that the following comments be incorporated in the subsequent Draft Environmental Impact Report (DEIR).

SCG recommends that the DEIR include a discussion of the following items:

- The presence and condition of existing utility infrastructure on the project site, including right-of-ways and/or easements.
- Identification of any exiting natural gas infrastructure that would need to be relocated and/or abandoned, in order to provide natural gas service to the proposed project.

Once again, we appreciate the opportunity to comment on the NOP If you have any questions, please feel free to contact me at (213) 244-5817 or WCChuang@semprautilities.com.

Sincerely,

James Chuang
Environmental Specialist
Southern California Gas Company

Southern California Gas Company

A Sempra Energy company

May 6, 2013

Westlands Water District
Attn: Kiti Buelna
3130 N. Fresno Street
P.O. Box 6056
Fresno, CA 93703-6056

Southern California Gas Company

9400 Oakdale Avenue
Chatsworth, CA
91313

Mailing Address:
P. O. Box 2300
Chatsworth, CA
91313-2300
M.L.9314

tel 818-701-4546
fax 818-701-3441

Subject: **Notice of Preparation of DEIR - Kern**
Avenal Cutoff Rd and Nevada Hdg Ely to Hwy 41
PPF 46-13x

Southern California Gas Company, Gas Transmission Department has received your request for pipeline locations within the general area of your proposed project. The Gas Company operates and maintains **(20)**-inch high pressure natural gas lines **(800)** within the limits of your construction project. Attached are copies of our pipeline Leak Survey Area sheets **(F1-25, 35)** which show the location of our pipelines. While we cannot guarantee the accuracy of these maps they are included to assist you in your planning and design.

One design parameter The Gas Company requires is that:

- **Consideration be given to the safety of our pipeline during the design and construction stages.**
- **Power-operated or power-driven excavation or grading shall not be allowed closer than two feet from any unexposed portion of pipeline or valve.**
- **A representative of The Gas Company must observe the excavation, when working within 10' of our facilities, to insure protection and to record pertinent data necessary for our operations.**

Upon request, at least two (2) working days prior to the start of construction, we will locate and mark our active underground facilities for the contractor at no cost. Please call Underground Service Alert (USA) at (800) 422-4133.

Arrangements for someone to stand-by and observe can be made by calling **(661) 763-2825** two working days prior to the start of construction. We would appreciate it if you would place a note on your plans to that effect.

Subject: **Notice of Preparation of DEIR - Kern**
Avenal Cutoff Rd and Nevada Hdg Ely to Hwy 41
PPF 46-13x

We will also require "final" grading plans and construction profiles prior to the start of construction.

Within the limits of your proposed construction, if you have not already done so, please contact the **Northern Distribution Region** of The Gas Company for information on their pipelines. You can contact them at **(559) 739-2308** and they will furnish you with any information you may require.

If a conflict is identified and can only be resolved by the relocation of our facilities, please be advised that the projected timetable for the completion of this relocation is one year. This includes planning, design, material procurement, cathodic protection, permits, environmental issues and construction.

Upon receipt of your construction plans, our group will review the plans to see if a conflict can be identified. If a conflict cannot be identified, you will be sent a "Letter of No Conflict." If a conflict has been identified, to monitor your project, a Document Control Plan File will be prepared, and assigned to a Project Manager. All future project correspondence is to be sent to the Project Manager.

Sincerely,

Rosalyn Squires
Pipeline Planning Assistant
Transmission Department

DEIR Avenal Cutoff Rd and NEvada Hdg Ely to Hwy 41.doc

230644.11,4004030.02

Center: 231163, 4003674.62

231681.89,4004030.02

30m
100ft

800_09

F1-35

20"Ø LINE #30

1-59

800_08

800-0749

F1-25

NEVADA AVE

28TH AVE

28521

60717-K 01-57

230644.11,4003319.23

231681.89,4003319.23

Map Title:
Printed By: COMPUTPRIS
Printed Date: 5/31/2013

Southern California Gas Company

Sempra Energy utility

April 15, 2012

Kiti Buelna
Westlands Water District
PO Box 6056
Fresno, CA 93703-6056

Delivered via email to kbuelna@westlandswater.org

RE: **NOP – Draft EIR for Westlands Solar Park Master Plan and Related Transmission Facilities**

Dear Ms. Buelna:

Thank you for the opportunity to provide scoping comments for the Draft Programmatic Environmental Impact Report (DEIR) being prepared for the Westlands Solar Park Master Plan and Related Transmission Facilities (Project). These comments are submitted on behalf of Defenders of Wildlife (Defenders) and our more than one million members and supporters in the United States - 200,000 of which reside in California.

Defenders is dedicated to protecting all wild animals and plants in their natural communities. To that end, Defenders employs science, public education and participation, media, legislative advocacy, litigation, and proactive on-the-ground solutions in order to prevent the extinction of species, associated loss of biological diversity, and habitat alteration and destruction.

Defenders strongly supports the emission reduction goals found in the Global Warming Solutions Act of 2006 (AB 32), including the development of renewable energy in California. However, we urge that in seeking to meet our renewable energy portfolio standard in California, project proponents design their projects in the most sustainable manner possible. This is essential to ensure that project approval moves forward expeditiously and in a manner that does not sacrifice our fragile landscapes and wildlife in the rush to meet our renewable energy goals.

As we transition toward a clean energy future, it is imperative for our future and the future of our wild places and wildlife that we strike a balance between addressing the near term impact of industrial-scale solar development with the long-term impacts of climate change on our biological diversity, fish and wildlife habitat, and natural landscapes. To ensure that the proper balance is achieved, we need smart planning for renewable power that avoids and minimizes adverse impacts on wildlife and lands with known high-resource values.

The proposed Project includes the Westlands Solar Park (WSP) and associated transmission facilities. The WSP would be located in the unincorporated area of west-central Kings County and the transmission facilities would traverse portions of Fresno, Madera and Merced Counties. The components of the Project area as follows:

Westlands Solar Park Generating Facilities
The Westlands Solar Park (WSP) consists of the development of approximately 24,000 acres for a utility-scale solar energy generation facility. The WSP Master Plan area consists almost entirely of highly disturbed and chemically impaired cultivated agricultural land. There are no dwellings or agricultural buildings within the plan area. The solar generating facilities will consist solely of photovoltaic solar arrays and associated electrical equipment and interconnections, along with support facilities,

California Program Office
1303 J Street, Suite 270
Sacramento, CA 95814
Telephone 916-313-5800
Fax 916-313-5812
www.defenders.org/california

substations, and other utilities infrastructure. At buildout the WSP would have an estimated generating capacity of approximately 2,400 Megawatts (MW) with an average of 2,000 acres (or 200 MW) developed per year over 12 years.

Henrietta-Gates Transmission Upgrades
A new 11 ± mile, 230-kV transmission line would be constructed in Fresno County which would run parallel and adjacent to the existing 230-kV Henrietta-Gates transmission line between the WSP site and the Gates Substation.

Westlands Transmission Corridor
Full buildout of the WSP plan area would require the addition of transmission capacity to the existing 500-kV Central California Transmission Corridor along I-5. A new 87± mile, 500-kV transmission line would be constructed running generally parallel to the existing transmission corridors from the Gates Substation in Fresno County north to the Los Banos Substation in Merced County.

Helm to Gregg Transmission Corridor
This new 36± mile transmission corridor in Fresno County would branch off the planned Westlands Transmission Corridor at the Helm Substation near the City of San Joaquin and head northward across the San Joaquin River, and then eastward to the Gregg Substation located north of Fresno and east of State Route 99.

The proposed Project represents a comprehensive approach to renewable energy development on highly disturbed land which, due to drainage and chemical complications, is severely impaired for continued agricultural use and is being retired from farming. Defenders has long advocated for just this type of master planned renewable energy development and is pleased to see WSP moving forward. At the same time, the Project, if built, would entail the significant conversion of open lands to the light industrial nature of a solar power plant. Although the WSP plan area is highly disturbed and impaired, the site does provide some habitat for special status species. The 134± miles of new and/or upgraded transmission lines also traverse the habitat of a variety of special status species. The proposed Project could result in the loss of habitat and displacement of State and Federally listed wildlife species such as San Joaquin kit fox (*Vulpes macrotis mutica*), blunt-nosed leopard lizard (*Gambelia sila*), Tipton kangaroo rat (*Dipodomys nitratoides nitratoides*), Nelson's antelope squirrel (*Ammospermophilus nelsoni*), black-crowned night heron (*Nycticorax nycticorax*), and burrowing owl. The DEIR should provide the following:

Science Based Baseline Biological Information
The proposed Project is located within the known territory of special status species. Additionally, the open, lands located immediately adjacent to the WSP planning area and transmission facilities must be taken into consideration as the proposed Project sites may be utilized by special status species occurring on those lands. Biological field surveys for these species must be completed. The analysis, and any mitigation strategies, in the DEIR must be based on these studies. Without survey information, any impact analysis would be tenuous and incomplete and it would not be possible to ascertain if any proposed mitigation measures are appropriate. We recommend the applicant and the County engage in full consultation with the US Fish and Wildlife Service (FWS) and the California Department of Fish and Wildlife (CDFW) for guidance on impact assessment and mitigation and that the appropriate level of surveys be completed.

Whole Project Addressed
The DEIR must address the whole of the project including the construction, operation and maintenance of tap lines, telco/fiber optic lines, and substations located both on and off-site.

Compensatory Mitigation for Loss of Habitat
Habitat loss is the primary cause of San Joaquin Valley upland species endangerment (U.S. Fish & Wildlife 1998). It is essential that habitat for endangered and special status species in the Project area is protected to ensure survival and recovery of the species. To ensure habitat protection, land uses must maintain or enhance the value of the land. The recommended approach for safeguarding such habitat is to protect land in large

blocks whenever possible. This minimizes edge effects, increases the likelihood that ecosystem functions will remain intact and facilitates management.

The proposed Project including the transmission facilities has the potential impact habitat for a number of State and Federal threatened and endangered species. This loss of habitat could be significant and must be mitigated through the establishment of compensatory mitigation at prescribed ratios. Again, this mitigation should be determined through consultation with FWS and CDFW.

Project Construction and Operation Protocols Must be Wildlife Friendly
The DEIR, in consultation with FWS and CDFW, must identify project construction and operation protocols to avoid and minimize impacts to wildlife. Protocols could include San Joaquin kit fox construction protocols, buffer zones, shielded lighting, and a prohibition on the use of rodenticides.

Security Fence Must be Wildlife Friendly
The proposed Project includes security fences around each site's perimeter. This would result in over seven miles of miles of fencing. This represents a significant barrier to wildlife. The security fences must be designed to be wildlife friendly and allow safe passage of San Joaquin Valley kit fox and other species. In the event that chain-link fencing is used, the bottom of the fence must be raised 5-7 inches off the ground and knuckled under along the entire perimeter of the Project, thereby permitting easy under-passage by foxes at any location.

Transmission Lines
The Project proposes 134± miles of new or upgraded transmission lines. While there is a clear need for additional transmission capacity to facilitate renewable energy development in the region, development of that capacity carries the potential for both direct and indirect impacts. The siting of the additional transmission and associated facilities will directly affect where renewable energy development occurs. "Smart from the Start" transmission facility siting which avoids high value farmland and habitat lands will foster future renewable energy development which also avoids high value farmland and habitat. The DEIR must address both alternatives to routing as well as the potential for grow-inducing impacts resulting from additional capacity.

Cumulative Impact Analysis
The proposed Project is just one of approximately 50 solar projects proposed or permitted in the southern San Joaquin Valley which have the potential to convert over 75,000 acres from agricultural and open lands to the light industrial land use of a utility scale solar power plant. This is in addition to impacts resulting from residential, industrial, and infrastructure development, and other types of energy development including the expected fracking within the Monterey Shale Formation. The cumulative loss of agricultural, habitat, and foraging lands must be addressed in the DEIR.

Conclusion
Defenders is very pleased to see the proposed Westlands Solar Park and related transmission facilities project moving forward into CEQA review. We strongly encourage the applicant and the District to coordinate and work closely with CDFW and FWS to incorporate the necessary biological analysis and to develop appropriate strategies to avoid, minimize and mitigate any impacts to biological resources from the proposed Project.

We look forward to reviewing the DEIR for this Project. Please include us in any notices for the proposed Project. Thank you once again for the opportunity to provide scoping comments on the Westlands Solar Park project and for considering our comments. If you have any questions, please me at (530) 902-1615 or via email at kate@kgconsulting.net.

Respectfully submitted,

Kate Kelly
Project Manager

Cc:
Ken Sanchez, USFWS
Thomas Leeman, USFWS

Julie Vance, CDFW
Bob Doud, Westlands Solar Park
Dan Kim, Westlands Solar Park

The Nature Conservancy
Protecting nature. Preserving life.™

Memorandum

To: Kiti Buelna and Bert Verrips, Westlands Water District
3130 N. Fresno Street, P.O. Box 6056. Fresno, CA 93703-6056

From: Laura Crane, The Nature Conservancy

Date: April 15, 2013

Subject: Comments on the Notice of Preparation (NOP) to prepare an Environmental Impact Report (EIR) on the Westlands Solar Park Master Plan and Planned Transmission Corridors in Central California.

On behalf of The Nature Conservancy of California (the Conservancy), we are writing to provide comments on the Notice of Preparation (NOP) to prepare for an Environmental Impact Report (EIR) on the Westlands Solar Park Master Plan and Planned Transmission Corridors in Central California.

The Nature Conservancy is a global, non-profit organization dedicated to the conservation of biodiversity. We seek to achieve our mission through science-based planning and implementation of conservation strategies that provide for the needs of people and nature. We strongly support the development of renewable sources of energy to mitigate the increasing threat of climate change. However, if not located, built, and operated responsibly, energy projects can negatively impact biodiversity, harm wildlife and their important habitats, and diminish water resources, especially in fragile desert environments. The Conservancy supports siting renewable energy facilities in locations where ecological impacts can be minimized, contained, or mitigated. Generally, these locations are close to economic centers and existing transmission lines, and do not displace productive agriculture and ranching operations.

We have been following the development of the Westlands Solar Park (WSP) and have found that the WSP is an example of a location that meets many, if not all of these criteria. The WSP is located on drainage-impaired farmland and, biological surveys conducted to date indicate that WSP is absent of special-status species with the exception of western burrowing owl. The solar operations would also use significantly less water than is currently used for the agricultural operations, thereby providing a more sustainable long-term land use.

The Conservancy encourages the continued development of the Westlands Solar Park Master Plan and Planned Transmission Corridors. We are supportive of the programmatic approach that is being taken to plan for both solar energy and transmission corridors. Furthermore, we encourage

the Westlands Water District (WWD) to consider broadening their approach and continue to programmatically plan for solar energy development on other WWD lands outside of the WSP.

We recognize that this Environmental Impact Report is for adoption of the WSP Master Plan and transmission corridors, and that the solar generating projects and transmission projects subsequently brought forward pursuant to the plan and adopted transmission alignments will be permitted by the respective public agencies that have jurisdiction. That said we feel it important to mention that future transmission projects within the Helm-Gregg transmission corridor should plan for and minimize impacts to the San Joaquin River and the Fresno Slough.

If you have any questions, please do not hesitate to contact me at (760) 399-7275 or lcrane@tnc.org.

Sincerely,

Laura Crane
The Nature Conservancy

April 15, 2013

Comments of the California Consumers Alliance (CCA) regarding:

The Westlands Water District (WWD) Notice of Preparation (NOP) of an Environmental Impact Report (EIR) Pursuant to the requirements of the California Environmental Quality Act (CEQA) and Notice of Public Scoping Meeting for:

The Westlands Solar Park (WSP) Master Plan and Planned Transmission Facilities

Introduction:

The CCA is an organization established for the purpose of providing consumers with access to the technical and analytical expertise and tools needed to fully and effectively participate in transmission planning processes. CCA supporters are electricity consumers who reside and work in the service territories of the State's Investor Owned Utilities (IOUs): PG&E, SCE, and SDG&E. The IOU's transmission facilities comprise a major portion of California's integrated high voltage electrical grid; our organization involves subject matter experts and analysts with experience in the complex fields of energy markets, transmission planning, generation technologies, and regulatory policy who advocate for efficient, cost effective and environmentally sensitive solutions to the identified needs of the State's electrical grid.

The CCA is a participant in the California Independent System Operator's (CAISO) regional transmission processes, and other regulatory decision making processes that affect the provision of electricity. CCA supporters and consultants are also contributors to transmission studies performed by the Renewable Energy Transmission Initiative (RETI) and the California Transmission Planning Group (CTPG). RETI and CTPG examined potential electricity infrastructure developments in the context of meeting California's RPS goals, and published what CTPG characterizes as a "statewide transmission plan." RETI's and CTPG's transmission plans are available to decision makers.

CCA strives to be involved meaningfully in processes that determine electricity infrastructure needs. We are familiar with the topics and the objectives described in the Westlands Water District Notice of Preparation of an Environmental Impact Report, and discussed by the WWD representatives at the April 9, 2013 Scoping Meeting. We appreciate the opportunity to offer the following requests for clarification, perspectives and comments, for the Westland Water District's consideration.

1) Concerning the WWD NOP of an EIR and Public Scoping Meeting:

Overview of Planned/Related Transmission Facilities:

The WWD NOP indicates that the WSP "Overall Project" includes three related transmission facilities. We have initial questions and concerns regarding these planned/related transmission facilities. We also have concerns regarding some of the

information relayed to attendees of the April 9, 2013 Public Scoping Meeting. We ask that WWD address, and to the extent possible, alleviate these concerns in preparation of the EIR.

The WWD NOP, and scoping meeting presentation on behalf of WWD do not specify how the three related transmission facilities would be paid for. A review of costs for similar projects reveals that the bill for the three WSP proposed transmission facilities could likely exceed a billion dollars. Furthermore, unless the transmission is built as merchant project—where users of the transmission facilities pay for the facilities through contractual wheeling arrangements—costs will have to be recovered through the CAISO's Federal Energy Regulatory Commission (FERC) jurisdictional Transmission Access Charge mechanism. This is the typical method of recovering the costs of new transmission facilities in the CAISO balancing authority area. It appears that the described WSP overall project would be within the CAISO balancing authority. Accordingly, recovery of the transmission facilities' costs will have a direct and significant impact on consumers within the CAISO balancing authority. For the sake of clarity, we request that the WWD includes, as a topic in the EIR, a description and discussion of the costs, and the anticipated method of cost allocation for the WSP related transmission facilities.

The Project Location section of the NOP describes WSP upgrades to Path 15 as needed. According to the Detailed Project Description section of the NOP, a full buildout of the WSP will require transmission additions. The NOP also leads the reader to believe that the transmission facilities are cost effective. As discussed at the public scoping meeting, and reiterated here; the WWD should provide evidence in the form of publicly available data that shows that the described transmission facilities are determined to be needed, required, and cost effective.

Note that to determine a facility is "needed" or "required," it is necessary to find that other feasible alternatives for accommodating additional generation development in the Westlands area have been considered and found less desirable. The WWD has, thus far, not identified other feasible alternatives and has not provided analysis indicating that the proposed project is, in comparison with such alternatives, preferred. Similarly, to determine that a facility is "cost effective," it is necessary to show that the parties ultimately responsible for paying for the proposed project are economically better off with the proposed project than if any of the other feasible alternatives were pursued. Again, WWD has not identified other feasible alternatives and has not provided analysis demonstrating that the proposed project will result in lower costs to consumers than any of the other alternatives.

We are additionally concerned by WWD representative's statement at the scoping meeting that there is "insufficient power" for the Fresno area and that this deficiency is increasingly causing outages. Likewise the Project Objectives section of the NOP describes the Fresno area as "electrically constrained." We are unaware of any information that indicates the Fresno area transmission system is failing to meet applicable reliability standards, or, that available generating capacity in the Fresno load

pocket is inadequate. If the WWD has data showing otherwise, we request reference to the evidence of such findings. Furthermore, we urge an abundance of caution since unsubstantiated claims of this nature are potentially misleading and could result in skewed views on actual electricity infrastructure needs, and consequently, the type, magnitude and range of solutions that should be considered.

2) Scope and Content of the EIR:

Socio-economic impacts

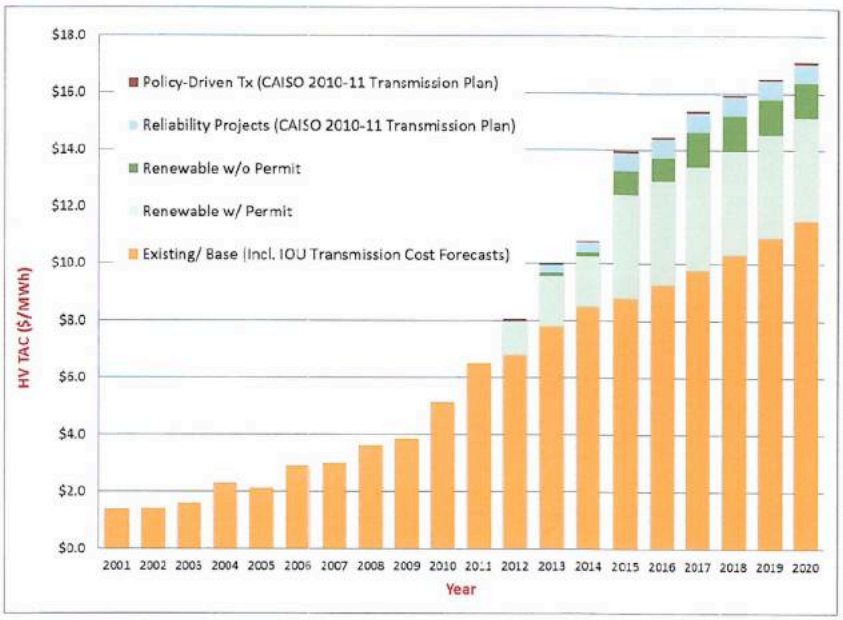
We recognize that except for limited circumstances, CEQA does not require a discussion of socio-economic impacts. Nevertheless CCA recommends that WWD identifies alternatives to the proposed project and considers evaluating the socio-economic impacts of the WSP planned/related transmission facilities versus alternatives. An evaluation of the socio-economic impacts of alternatives would provide greater insight to decision makers who may need to consider economic impacts in the performance of their statutory obligations in subsequent permitting and siting proceedings.

We note that the overall goal and specific objectives of the WSP Master Plan contain targets that are clearly centered upon social and economic ideals. CCA supports some of these targets and ideals. It should be recognized, however, the likelihood of the commerce-derived benefits materializing in the targeted local community identified in the NOP increases when significant impacts on surrounding communities are eliminated or reduced.

With respect to the socio-economic impacts, WWD should consider that since 2001, the High Voltage Transmission Access Charge (HV TAC) allocated to consumers in PG&E service territory has increased 6.2 fold (as of January, 2013). By 2020 the HV TAC is projected to be approximately $17.00/ MWh. This represents a 1200 percent increase in the HV TAC from $1.40/MWh in 2001. Accounting for the 2020 projected Low Voltage Transmission Access Charge (LV TAC); the combined Transmission Access Charges allocated to PG&E consumers is projected to be nearly $25.00/MWh in 2020.

The exponential increase in FERC jurisdictional transmission revenue requirements, a socialized cost, is unprecedented and sufficient cause for alarm. Overbuilding or adding unnecessary transmission capacity to accommodate potential build-out of generation adds the risk of stranded investment to ratepayer commitments that are already staggering. Network upgrades that do not enhance the efficient use of transmission needlessly add to the growing costs of conveying electricity; siphoning away capital, planning resources, and jobs that should be directed towards needed projects and efficient solutions. Furthermore it is not just utility ratepayers who pay for transmission infrastructure; the increasing costs are also rolled into the purchases of goods and services, spreading across every segment of the communities where the costs are allocated.

Exhibit A
Historical PG&E Area and CAISO-wide HV TAC ($/MWh) for 2001-2011 and Projected CAISO-Wide HV TAC ($/MWh) for 2012-2020 Based on the CPUC/E3 LTPP Evaluation Metric Calculator, Dated April 29, 2011



California ISO
Shaping a Renewed Future

January 03, 2013 TAC Rates
Based on Filed Annual TRR/TRBA and Load Data

TAC Components:

	Filed Annual TRR ($) [1]	Filed Annual Gross Load (MWh) [2]	HV Utility Specific Rate ($/MWH) [3] = [1] / [2]	TAC Rate ($/MWH) [4] = total [1]/total [2]	TAC Amount ($) [5] = ([2]) * [4]
PGE	$ 378,006,106	89,530,000	$ 4.2221	$ 8.6805	$ 777,165,812
SCE	$ 785,506,776	90,531,472	$ 8.6766	$ 8.6805	$ 785,859,097
SDGE	$ 395,832,436	21,266,400	$ 18.6130	$ 8.6805	$ 184,603,139
Anaheim	$ 29,551,469	2,507,620	$ 11.7847	$ 8.6805	$ 21,767,414
Azusa	$ 2,060,904	257,416	$ 8.0061	$ 8.6805	$ 2,234,501
Banning	$ 1,195,554	144,652	$ 8.2650	$ 8.6805	$ 1,255,653
Pasadena	$ 14,264,576	1,231,980	$ 11.5786	$ 8.6805	$ 10,694,211
Riverside	$ 29,304,431	2,180,985	$ 13.4363	$ 8.6805	$ 18,932,056
Vernon	$ 2,359,594	1,180,000	$ 1.9997	$ 8.6805	$ 10,242,999
Atlantic P15	$ 28,123,812	-	$ -	$ 8.6805	$ 0
Startrans	$ 4,217,794	-	$ -	$ 8.6805	$ 0
Trans-Bay Cable	$ 122,664,066	-	$ -	$ 8.6805	$ 0
Citizens Sunrise	$ 12,786,745	-	$ -	$ 8.6805	$ 0
Colton	$ 3,234,577	372,179	$ 8.6909	$ 8.6805	$ 3,230,702
VEA	$ 11,607,359	544,970	$ 21.2991	$ 8.6805	$ 4,730,616
ISO Total	**$ 1,820,716,199**	**209,747,674**			**$ 1,812,754,881**

TAC 03Jan13 Rates_01162013.xls TAC Rates 03Jan13 Page 1 of 4 as of 1/24/2013 2:36 PM

Environmental Impacts

We appreciate the preliminary efforts to summarize the probable environmental effects. As described by the WWD representative at the scoping meeting, the effort to site and route the related transmission facilities in a manner that avoids impacting residences, businesses, productive farmland, and environmentally sensitive areas is laudable.

We also appreciate Dr. James Reed's, (California Energy Commission) advice that WWD considers developing project alternatives that comport with Garamendi Principles--for reference, the relevant Section of SBX1 2 (mandating the 33% RPS) is provided here:

SEC. 33. Section 1005.1 is added to the Public Utilities Code, to read:

1005.1. (a) The commission shall issue a decision on an application for a certificate within 18 months of the date of filing of the completed application, when all of the following are true:

(1) The application is for a certificate for building or upgrading an electrical transmission line that the commission finds necessary to provide transmission to load centers for electricity generated in a high priority renewable energy zone or is reasonably necessary to facilitate achievement of the renewables portfolio standard established in Article 16 (commencing with Section 399.11) of Chapter 2.3.

(2) The commission has considered all of the following:

(A) The utilization of rights-of-way by upgrading existing transmission facilities instead of building new transmission facilities, where technically and economically justifiable.

(B) The expansion of existing rights-of-way, if technically and economically feasible, when construction of new transmission lines is required.

(C) The creation of new rights-of-way when justified by environmental, technical, and economic reasons.

(D) The availability of cost-effective alternatives to transmission, such as energy efficiency measures and distributed generation.

(3) The commission has not expressly found any of the following:

(A) That the investment is not reasonable and necessary to maintain or enhance reliability of the transmission grid.

(B) That the building or upgrading of the electrical transmission line will not maintain or enhance efficient use of the transmission grid.

(C) That the transmission line fails to meet other applicable standards and requirements for approval and construction.

(b) An extension of time may be granted by the commission if it finds the extension is necessary for completion of review pursuant to the California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources Code).

We note that the location of the proposed Westland Solar Park is described in the NOP as generally void of significant biological, historical and cultural resources, the primary reason being attributed to the conversion of site to agricultural use decades ago. Because the site is on the brink of being converted again, we believe it is worthwhile to search historical records for information relevant to the site. Historical records provide valuable insights on benchmarks of the past, causes of environmental degradation, and reasons for decline/loss of cultural artifacts and heritage. Moreover, from a land use perspective, history can tell us what needs to be prepared for in the future.

We offer the following information and perspectives on issues that we observe are lacking in both discussion and dissemination in the NOP; the CCA believes that issues contained within these bullets may be considered germane to the Probable Environment Effects, and worth evaluating categorically within the applicable CEQA Appendix G checklist items.

Historical Records of Hydrological, Ecological, Seismological, Cultural Significance:

- ✓ Before Sierra watershed diversions, the Tulare Lake was, by surface area, the largest body of freshwater in the continental United States, west of the Mississippi: https://gsa.confex.com/gsa/2005AM/finalprogram/abstract_91270.htm

- ✓ The Sierra watersheds feeding the Tulare Lake were the destination of the Western Hemisphere's southernmost Chinook salmon run:
R. Raines Oct. 14, 1992, Friant Water Users Authority.
http://www.epa.gov/wed/pages/staff/lackey/pubs/illusion.htm

- ✓ The lake and surrounding wetlands were an important stop for hundreds of thousands of migratory birds along the Pacific Flyway:
http://en.wikipedia.org/wiki/Tulare_Lake

- ✓ For centuries, prior to colonization, indigenous people lived, visited, and traded at the Tulare Lake. The Tache, and other Yokuts people are estimated to have numbered 70,000. The people hunted and subsisted on deer, elk, antelope, native plants and the abundant fishery. Resident and visiting tribes built rafts for fishing, hunting, and migration by use of the tule rush growing at Tulare Lake and surrounding wetlands: Heizer, Robert F; Elsasser, Albert B (1980). *The Natural World of the California Indians*. Berkeley: University of California Press.

- ✓ A detailed historical account of traditional life of the Choinumne (Sierra Yokuts) and conditions when they visited the Tulare Lake (1853-1854) California Historical Society/Heyday Books (1993); *Indian Summer*, told by Thomas Jefferson Mayfield (1929) prepared by Malcolm Margolin and Frank Latta.

- ✓ A historical account by John Barker, ca.1900 of a massive earthquake witnessed at Tulare Lake is referenced in Documentary Study of the Felt Affects of the Great California Earthquake of 1857 the Bulletin of the Seismological Society, of America Vol. 68, No.6, (Dec.1978). John Barker's reminiscence:

http://geology.about.com/od/geology_ca/ig/saf1857/saf1857pinospinemtn.htm

- ✓ During periods of high runoff, the dry Tulare Lake basin floods and reappears (i.e. El Nino events of 1983, and 1997), creating environmental impacts and concerns: http://www.epa.gov/region9/water/wetlands/tulare-hydrology/tulare-summary.pdf

We highly recommend a review of the recently released report, *Floods and Droughts of the Tulare Lake Basin*, authored by John T. Austin and published by the Sequoia Natural History Association (2013). This report presents a detailed historical record of floods and droughts that have occurred within the Tulare Lake Basin over the last 2000 years. Two of the purposes of this report are to provide the reader, (i.e. land managers) with information regarding the risks associated with storm precipitation, and, preparing for floods and droughts in the Tulare Lake Basin. The document is available at the URL below:

http://tularebasinwatershed.org/sites/default/files/sites/all/default/files/pdf/Floods-Droughts-Tulare-Lake-Basin_JAustin_20130109.pdf

CCA offers the following info regarding the aesthetic, cumulative, and operations and maintenance impacts of transmission:

- ✓ High voltage tower lines (HVTL) are long lasting industrial infrastructure, rarely if ever removed. In California, there are examples of HVTLs approaching nearly a century of service; transmission tower lines are an essentially permanent feature of our landscape.

- ✓ State law prioritizes expansion of existing rights of way (ROWS), when new transmission facilities-network upgrades are required.

- ✓ Establishing a new HVTL ROW has potential for cumulative impacts by mandates directing future needed facilities into existing corridor(s).

- ✓ FERC requires Transmission Owners (TOs) to develop and implement a Transmission Vegetation Management Plan (TVMP) pursuant to Order No.777 and guidelines of NERC Reliability Standard FAC--003-02

- ✓ Long conductor spans, terrain, high or near capacity flows during heat events that are typical in Central Ca. are factors that TOs consider in the implementation of their TVMP. TO's implementation of TVMP has recently resulted in clear-cutting and wholesale removal of vegetation in areas of some ROW's.

- ✓ TVMPs impact native, non-native, and cultivated/commercial value shrubs and trees.

- ✓ Herbicides are utilized in the implementation of TO's TVMP

3) Alternatives to the WSP "Overall Project":

CEQA requires that the WWD EIR identifies a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the objectives of the proposed project but would avoid or substantially lessen any of the significant effects of the project and evaluate the comparative merits of the alternatives. CCA asks that WWD gives consideration to the following suggested alternatives.

(I) Alternative involving the Pre-contingency Redispatch of Thermal Generation.

This alternative may minimize the need for new transmission--yet still accommodate generation development within the Westlands area. This alternative would likely have minimal adverse environmental impacts compared to the proposed project and from a CEQA perspective, would therefore be preferred.

Although this alternative may not meet all of the transmission projects objectives, it may achieve the overall goal since it accommodates the generation development, and the most "preferred" transmission route; the most "preferred" transmission route being the one that is not needed. The CCA believes this alternative, involving the pre-contingency redispatch of thermal generation, strikes the right balance between costs, and overall goals of the master plan while reducing environmental impacts and GHG emissions.

(II) Alternative duplicating CAISO-CPUC 33% RPS Commercial Interest Case

This alternative duplicates the determinations involved in the CAISO 2012/2013 TPP 33% RPS policy driven transmission assessment. The CPUC and CEC recommended that 1500 MW of renewable capacity build-out in the Westlands CREZ be analyzed by CAISO in three out of four of the IOUs' 33% RPS generation portfolios, including Commercial Interest Base Case. The CAISO board approved network upgrades supportive of 1500 MW of calculated generation build-out in the Westlands CREZ, as part of its 2012/2013 Transmission Plan--available at: http://www.caiso.com/Documents/20122013%20transmission%20planning%20process%20-%20Board-approved%20plan%20and%20appendices

(III) Alternative duplicating CAISO-CPUC 33% RPS High DG portfolio sensitivity case:

This alternative duplicates the determinations involved in the CAISO 2012/2013 TPP 33% RPS policy driven transmission assessment. The CPUC and CEC recommended that 990 MW of renewable capacity be accounted for in the Westlands CREZ be analyzed in the High DG portfolio sensitivity study. Again the CAISO board approved network upgrades supportive of 990 MW of calculated renewable generation build-out in the Westlands CREZ, as part of its 2012/2013 Transmission Plan. The description of this alternative is available at the same URL provided above.

Summary:

The CCA believes that achieving California's clean energy goals is best facilitated by collaborative efforts on the part of agencies, utilities, generation and energy resource providers, system operators, affected land owners, and, the general public who are tasked with ultimately paying for the transformation. While uncertainties remain, we believe that efforts to collaborate are on the increase and resulting in clearer paths towards identifying and implementing economically efficient and environmentally considerate means to meet the State's energy needs.

The CCA is willing to support the programmatic development of Westlands Solar Park to the extent that the project is sensitive to impacts on the environment and the concerns of consumers. In closing, we request that WWD provide at its website a page for accessing and reviewing submitted comments and information related to the matter. The CCA looks forward to collaborating with WWD in preparing the EIR.

Respectfully Submitted,

Ron Dickerson,
California Consumers Alliance
PO Box 3751 Clovis Ca. 93613-3751
CalConsumersAlliance@gmail.com
Phone: (559) 392-7850

LOZEAU DRURY LLP
T 510.836.4200
F 510.836.4205
410 12th Street, Suite 250
Oakland, Ca 94607
www.lozeaudrury.com
christina@lozeaudrury.com

Via Email and/or U.S. Mail as Indicated

April 30, 2013

Mr. Don Peracchi
President of the Board of Directors
Westlands Water District
3130 N. Fresno Street
Fresno, CA 93703

Ms. Kati Buelna
Westlands Water District
3130 N. Fresno Street
Fresno, CA 93703

Mr. Michael L. Connor, Commissioner
U.S. Bureau of Reclamation
Bureau of Reclamation
1849 C Street NW
Washington DC 20240-0001

Mr. David Murillo, Regional Director
U.S. Bureau of Reclamation
Mid Pacific Regional Office
2800 Cottage Way
Sacramento CA 95825-1898

Ms. Brandi L. Orth
Fresno County Clerk/Registrar
2221 Kern Street,
Fresno, CA 93721
elections@co.fresno.ca.us

Fresno County Clerk of the Board of Supervisors
2281 Tulare Street, Room 301
Fresno, CA 93721
Clerk/BOS@co.fresno.ca.us

Kings County Clerk/Recorder
Kings County Government Center
1400 W. Lacey Boulevard
Hanford, CA. 93230

Ms. Catherine Venturella
Kings County Clerk of the Board of Supervisors
1400 W. Lacey Boulevard
Hanford, CA 93230
catherine.venturella@co.kings.ca.us

Merced County Clerk
2222 M Street
Merced, CA 95340

Mr. James L. Brown
Merced County Executive Officer/Clerk of the Board
2222 M St.
Merced, CA 95340

Ms. Rebecca Martinez
Madera County
Clerk/Recorder/Registrar
200 W. 4th Street
Madera, CA 93637
CountyClerkInfo@Madera-County.com

Ms. Tanna Boyd
Madera County Chief Clerk of the Board of Supervisors
200 W. 4th Street
Madera, CA 93637
tboyd@co.madera.ca.gov

Re: **NEPA/CEQA and Land Use Notice Request for the Westlands Solar Park Master Plan and Planned Transmission Facilities (SCH # 2013031043)**

Dear All:

I am writing on behalf of the Laborers International Union of North America, Local Union 294 and its members living in Fresno County ("LiUNA" or "Commenters") regarding the Westlands Solar Park Master Plan and Planned Transmission Facilities (SCH # 2013031043), including all actions referring or related to: 1) the development of a 2,400 MW solar PV generating facility on 24,000 acres of land, phased in 200 MW projects; 2) the construction of a second transmission line along the existing 230-kV Henrietta-Gates line; 3) an upgrade to connect the Gates Substation to the Los Banos Substation (the transmission route will diverge from the existing transmission corridor near SR 198, run through the interior of the Westlands Water District, and rejoin the corridor at Panoche Substation); and 4) the construction of a new transmission route running north from Gates substation, over the San Joaquin River, swinging northeast and east through Madera County, then crossing SR-99 on its approach to Gregg Substation (collectively, "Project").

In particular, we hereby request that the Westlands Water District, the U.S. Bureau of Reclamation, and the Counties of Fresno, Kings, Merced, and Madera (collectively, "Agencies") send by mail and electronic mail to our firm at the address below notice of any and all actions or hearings related to activities undertaken, authorized, approved, permitted, licensed, or certified by the Agencies and any of their subdivisions, and/or supported, in whole or in part, through contracts, grants, subsidies, loans or other forms of assistance from the Agencies, including, but not limited to the following:

- Any and all notices prepared pursuant to the National Environmental Policy Act ("NEPA"), including, but not limited to:
    - Notices of any public hearing in connection with the Project held pursuant to NEPA.
    - Notices of Intent that an Environmental Impact Statement ("EIS") or supplemental EIS is required for the Project, pursuant to NEPA, to 40 CFR § 1508.22, or any other title under the Code of Federal Regulations.
    - Notices of availability of an environmental assessment ("EA"), Draft EIS, or a finding of no significant impact ("FONSI") under NEPA for the Project.
    - Notices of any Record of Decision of any EIS, a FONSI, or other approval and/or determination to carry out the Project, prepared pursuant to NEPA or any other provision of law.
    - Notice of categorical exclusion from NEPA.
    - Notice of any Final EIS prepared pursuant to NEPA.

- Notice of any public hearing in connection with the Project as required by California Planning and Zoning Law pursuant to Government Code Section 65091.

- Any and all notices prepared pursuant to the California Environmental Quality Act ("CEQA"), including, but not limited to:

    - Notices of any public hearing held pursuant to CEQA.
    - Notices of determination that an Environmental Impact Report ("EIR") or supplemental EIR is required for a project, prepared pursuant to Public Resources Code Section 21080.4.
    - Notices of availability of an EIR or a negative declaration for a project prepared pursuant to Public Resources Code Section 21152 and Section 15087 of Title 14 of the California Code of Regulations.

- Notices of approval and/or determination to carry out a project, prepared pursuant to Public Resources Code Section 21152 or any other provision of law.
- Notice of approval or certification of any EIR or negative declaration prepared pursuant to Public Resources Code Section 21152 or any other provision of law.
- Notice of exemption from CEQA prepared pursuant to Public Resources Code section 21152 or any other provision of law.
- Notice of any Final EIR prepared pursuant to CEQA.

This request is filed pursuant to **40 CFR § 1506.6(b)(1)**, which requires the lead NEPA agency to mail notice to those who have requested it on an individual action of all NEPA-related hearings, public meetings, and the availability of environmental documents, as well as under **California Public Resources Code Sections 21092.2, and 21167(f) and California Government Code Section 65092**, which require local agencies to mail such notices to any person who has filed a written request for them with the clerk of the agency's governing body.

Please send notice by mail and electronic mail to:

Richard Drury
Christina Caro
Stacey Oborne
Lozeau Drury LLP
410 12th Street, Suite 250
Oakland, CA 94607
richard@lozeaudrury.com; christina@lozeaudrury.com; stacey@lozeaudrury.com

Please call should you have any questions. Thank you for your attention to this matter.

Sincerely,

Stacey Oborne
Paralegal
Lozeau | Drury LLP

Solo Mio Farms
8711 21st Avenue, Lemoore, California 93245, (559) 924-0148, FAX (559) 924-0150

April 14, 2013

Westlands Water District
Attention: Kiti Buelna
3130 N. Fresno Street
P.O. Box 6056
Fresno, CA 93703-6056

Dear Kiti Buelna,

I am writing in regards to the Notice of Preparation (NOP) of a Draft Environmental Impact Report (EIR) for the Westlands Solar Park Master Plan and Related Transmission Facilities.

Under Section 8. Description of Project, sub-heading *Project Objectives of the Henrietta-Gates Transmission Upgrades*, the NOP states that the project is to "provide delivery of renewable solar power [...] in a cost-effective manner while minimizing impacts to the environment and the agricultural community" (page 8). The proposed Westlands Transmission Corridor fails to "minimize impacts to the [...] agricultural community" for various reasons.

The proposed Westlands Transmission Corridor does not follow the existing transmission corridor of Path 15, but instead passes through new land that has not yet been devalued by the presence of a transmission corridor. By having the proposed Westlands Transmission Corridor run parallel to the existing transmission corridor, it would minimize impacts on the agricultural community by not devaluing land that is currently clear of a transmission corridor.

The creation of the proposed Westlands Transmission Corridor will also create new maintence access sites that have not yet been identified, resulting in land owners being unaware and unable to determine the negative and detrimental impact it will have on property owners.

By having the proposed Westlands Transmission Corridor pass through the interior of Westlands Water District, it creates a new transmission structure that will pass through approximately forty miles of land that is not drainage impaired and impede farming activities along its route (page 10). These lands that are not drainage impaired receive no benefit from this transmission corridor. This proposed Westlands Transmission Corridor will impede farming activities such as crop dusting and will cause economic damage to land owners property.

The proposed Westlands Transmission Corridor will pass through already developed high density permanent vineyard plantings and other permanent crops. It could also prevent future permanent crop plantings that provide valuable economic resources to California and in particular to the County of Fresno.

The proposed Westlands Transmission Corridor did not take into account the presence of deep agricultural irrigation wells that it may pass through and the damage that may occur to those wells with the presence of the proposed corridor. And whether it will hinder the ability of land owners to maintain and repair their existing or future facilities.

Solo Mio Farms

Under Section 8. Description of Project, sub-heading *Overall Goals*, the NOP states that "the paths are aligned in a manner that best facilitates the economic development of the drainage-impaired lands" (page 7). However, much of the proposed Westlands Transmission Corridor from Marmon Avenue north to Highway 145 does not pass through drainage impacted lands.

Also under Section 8. Description of Project, sub-heading *Project Objectives of the Henrietta-Gates Transmission Upgrades*, the NOP, one of the major goals is to "provide utility-scale solar generation in a location that is already traversed by high-voltage lines" (page 8). Yet Westlands Water District is proposing approximately over one hundred miles of new transmission lines to accomplish this. Aside from the negative agricultural impacts on land and operations, by having the proposed Westlands Transmission Corridor not follow the existing transmission corridor on Path 15 it decreases the aesthetic value of land that has not yet been tainted by the presence of a transmission corridor.

On page 10 of the NOP under the sub-heading *Westlands Transmission Corridor* and alternative route parallel to "the existing Path 15 transmission corridor for the entire distance between the Gates and Los Banos substations" is being rejected by the Westlands Water District Board of Directors (page 10). It is pertinent that it be publicly noted how many Westlands Water District Board Members have property that they or their families own or operate that the proposed Westlands Transmission Corridor pass through.

The NOP for the proposed Westlands Transmission Corridor has not adequately addressed the potential fly path of private air strips located on adjacent properties that the proposed transmission corridor will pass through. The negativ effects on flight paths that private pilots may experience due to the presence of the proposed transmission corridor have not yet been determined.

The NOP that Westlands Water District has issued did not provide adequate maps detailing the exact locations of the proposed Westlands Transmission Corridor so that individuals whose property is impacted by this project can adequately determine where and how much negative impact they will be exposed to because of this project.

It is my understanding from the April 9, 2013 Scoping Meeting that Westlands Water District proposes a multi-year build out of the Westlands Solar Park with an unknown length of time. However, Westlands Water District talks about installing new transmission corridors to service this proposed Westlands Solar Park that may never be needed if the build out of the solar park is never completed.

It is also my understanding that there has been no analysis of why they need to upgrade a 500-kV. If an analysis has not been completed. how has Westlands Water District determined that the 500-kV line needs to be upgraded?

There may be other issues and concerns that I may raise in the future, but do to the short notice, the lack of information and detailed maps that Westlands Water District failed to provide, I have been unable to fully analyze the problems caused by the proposed Westlands Transmission Corridor that would personally impact my property.

Solo Mio Farms

If you should have any questions regarding my comments and concerns of the Notice of Preparation of a Draft Environmental Impact Report, please do not hesitate to contact me at my office phone at (559) 924-0148 or on my cell phone at (559) 288-1428.

Sincerely,

Ed Coelho