

DRAFT

PROGRAM ENVIRONMENTAL IMPACT REPORT

VALLEY CLEAN INFRASTRUCTURE PLAN (VCIP)

STATE CLEARINGHOUSE No. 2024020124

WESTLANDS WATER DISTRICT

JULY 2025

**VOLUME I OF II
PEIR TEXT**

WESTLANDS WATER DISTRICT
NOTICE OF AVAILABILITY
OF THE
VALLEY CLEAN INFRASTRUCTURE PLAN (VCIP)
DRAFT PROGRAM ENVIRONMENTAL IMPACT REPORT

State Clearinghouse #2024020124

NOTICE IS HEREBY GIVEN that Westlands Water District (District), as Lead Agency, has completed a Draft Program Environmental Impact Report (Draft PEIR) for the proposed Valley Clean Infrastructure Plan (VCIP) in accordance with the California Environmental Quality Act (CEQA).

PROJECT LOCATION and OVERVIEW: The VCIP would be located in the Fresno County portion of the District on the west side of the San Joaquin Valley. The proposed VCIP provides a blueprint for the development of clean energy facilities and supporting infrastructure with an overall generating and delivery capacity of up to 21,000 MW on approximately 136,000 acres of repurposed farmland.

The District's main project objectives are to: 1) utilize the District's location, topography, and excellent insolation (solar radiation energy) attributes to promote the siting of solar generation, storage, and transmission of renewable energy, in furtherance of the state's renewable energy and carbon neutrality goals over approximately 35 years; 2) contribute to the solution of reduced water supply reliability by providing productive long-term but temporary repurposing of those lands from irrigated agriculture for renewable energy production to facilitate redirection of scarce water supplies while ensuring irrigated agriculture can be restored on the repurposed lands following the decommissioning of the renewable energy projects; 3) facilitate implementation of the Sustainable Groundwater Management Act (SGMA) pursuant to the Westside Subbasin Groundwater Sustainability Plan (GSP); 4) provide for orderly development, operation and decommissioning of clean energy facilities and balance the promotion of long-term but temporary development of solar energy projects and associated storage and transmission facilities with the protection of environmental resources; 5) provide utility-scale power generation on highly disturbed lands that provide minimal habitat value for wildlife and, to the extent feasible, have been fallowed or removed from irrigated agriculture.

PROJECT DESCRIPTION: The VCIP consists of the following two main Plan elements: "Energy Resource Plan" and an "Infrastructure Plan," as briefly described below.

Energy Resource Plan. The VCIP Energy Resource Plan is a master plan for clean energy development in the form of: 1) solar photovoltaic (PV) generating facilities, and 2) battery energy storage systems (BESS), both of which would be developed within defined "Development Focus Areas" (DFAs) consisting of District-owned land and private lands of participating landowners located within the Fresno County portion of the Westlands Water District service area. It is anticipated that the DFAs would be built out over a 10-year period.

Infrastructure Plan. The VCIP Infrastructure Plan includes the following supporting elements for conveyance of solar generation to the state's electricity load centers: 1) gen-tie lines, 2) collection substations, and 3) connector transmission lines. In addition, transmission lines outside the VCIP Plan Area would deliver the VCIP renewable generation to metropolitan load centers. These outside transmission lines are described in the PEIR at a conceptual level with potential impacts discussed in the PEIR for informational purposes only.

HAZARDOUS WASTE SITES: The VCIP Plan Area includes four hazardous waste sites enumerated under Section 65962.5 of the Government Code. These include: 1) Bullard Avenue Airstrip; 2) Airway Farms – Five Points Ranch Shop; 3) TMT Chemical Company on Oakland Avenue; and 4) Airway Farms Duster Ranch near Huron.

SIGNIFICANT ANTICIPATED ENVIRONMENTAL EFFECTS: The Draft PEIR identifies significant impacts under the following environmental issue areas: aesthetics, agricultural resources; air quality; biological resources; cultural and tribal cultural resources; paleontological resources; hazards and hazardous materials; hydrology and water quality; noise; public services; and transportation. Implementation of the VCIP would result in significant and unavoidable impacts related to aesthetics and agricultural resources. The remaining aforementioned impacts would 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, 286 W. Cromwell Avenue, Fresno, CA 93711.
- Westlands Water District Field Office, 23050 W. Mt. Whitney Avenue, Five Points, CA 93624.
- Fresno County Main Library, 2420 Mariposa Street, Fresno, CA 93721.
- Mendota Branch of the Fresno County Library, 1246 Belmont Avenue, Mendota, CA 93640.
- Firebaugh Branch of the Fresno County Library, 900 "O" Street, Firebaugh, CA 93622.
- Kerman Branch of Fresno County Library, 15081 W. Kearney Plaza, Kerman, CA 93630.
- San Joaquin Branch of the Fresno County Library, 8781 Main Street, San Joaquin, CA 93660.
- Tranquillity Branch of Fresno County Library, 25561 Williams Street, Tranquillity, CA 93668.
- Huron Library, 36050 "O" Street, Huron, CA 93234.
- Coalinga Library, 305 N. 4th Street, Coalinga, CA 93210.

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 **July 31, 2025** and ends **September 15, 2025**. Comments on the Draft PEIR must be received by the District no later than **5:00 PM on September 15, 2025**, to be addressed in the Final PEIR. Written comments may be submitted by mail or email to the attention of Russ Freeman, Deputy General Counsel, at the following:

Westlands Water District
286 W. Cromwell Avenue
Fresno, CA 93711
P.O. Box 5199
Fresno, CA 93755

Email: rfreeman@wwd.ca.gov

DISTRITO DE AGUA DE WESTLANDS
AVISO DE DISPONIBILIDAD
DEL
VALLEY CLEAN INFRASTRUCTURE PLAN (VCIP)
BORRADOR DEL INFORME DE IMPACTO AMBIENTAL DEL PROGRAMA

N.º de Registro Estatal: 2024020124

POR LA PRESENTE SE INFORMA que el Distrito de Agua de Westlands (el Distrito), como Agencia Principal, ha completado un Borrador del Informe de Impacto Ambiental del Programa (Borrador PEIR) para el propuesto Valley Clean Infrastructure Plan (VCIP), conforme a la Ley de Calidad Ambiental de California (CEQA).

UBICACIÓN Y RESUMEN DEL PROYECTO: El VCIP se ubicaría en la parte del Condado de Fresno del Distrito, en el lado oeste del Valle de San Joaquín. El VCIP propuesto proporciona un plan para el desarrollo de instalaciones de energía limpia e infraestructura de apoyo con una capacidad total de generación y entrega de hasta 21,000 MW en aproximadamente 136,000 acres de tierras agrícolas reutilizadas.

Los principales objetivos del proyecto del Distrito son: 1) Utilizar la ubicación, topografía y excelentes atributos de insolación (energía solar) del Distrito para promover la instalación de generación solar, almacenamiento y transmisión de energía renovable, en apoyo de los objetivos estatales de energía renovable y neutralidad de carbono durante aproximadamente 35 años; 2) Contribuir a la solución de la disminución de la confiabilidad del suministro de agua mediante la reutilización productiva a largo plazo pero temporal de esas tierras de agricultura irrigada para la producción de energía renovable, facilitando la redirección de suministros de agua escasos mientras se garantiza que la agricultura irrigada pueda restaurarse en las tierras reutilizadas tras la desactivación de los proyectos de energía renovable; 3) Facilitar la implementación de la Ley de Gestión Sostenible de Aguas Subterráneas (SGMA) conforme al Plan de Sostenibilidad de Aguas Subterráneas de la Subcuenca del Oeste; 4) Proporcionar un desarrollo ordenado, operación y desactivación de instalaciones de energía limpia y equilibrar la promoción del desarrollo solar a largo plazo pero temporal y las instalaciones asociadas de almacenamiento y transmisión con la protección de los recursos ambientales; 5) Proporcionar generación de energía a escala de servicios públicos en tierras altamente perturbadas que ofrecen un valor mínimo de hábitat para la vida silvestre y, en la medida de lo posible, han sido dejadas en barbecho o retiradas de la agricultura irrigada.

DESCRIPCIÓN DEL PROYECTO: El VCIP consiste de los siguientes dos elementos principales del Plan: “Plan de Recursos Energéticos” y “Plan de Infraestructura”, descritos brevemente a continuación.

Plan de Recursos Energéticos: Es un plan maestro para el desarrollo de energía limpia en forma de: 1) Instalaciones de generación solar fotovoltaica (PV), y 2) Sistemas de almacenamiento de energía con baterías (BESS), ambos desarrollados dentro de “Áreas de Enfoque de Desarrollo” (DFAs) definidas, que consisten en tierras propiedad del Distrito y tierras privadas de propietarios participantes ubicadas en la parte del Condado de Fresno del área de servicio del Distrito de Agua de Westlands. Se anticipa que las DFAs se desarrollarán durante un período de 10 años.

Plan de Infraestructura: Incluye los siguientes elementos de apoyo para el transporte de la generación solar a los centros de carga eléctrica del estado: 1) Líneas de conexión de generación (gen-tie), 2) Subestaciones de recolección, y 3) Líneas de transmisión conectoras. Además, líneas de transmisión fuera del Área del Plan VCIP entregarían la generación renovable del VCIP a centros de carga metropolitanos. Estas líneas externas se describen en el PEIR a nivel conceptual, y sus impactos potenciales se discuten en el PEIR solo con fines informativos.

SITIOS DE RESIDUOS PELIGROSOS: El Área del Plan VCIP incluye cuatro sitios de residuos peligrosos enumerados bajo la Sección 65962.5 del Código Gubernamental. Estos incluyen: 1) Pista de aterrizaje de la Avenida Bullard; 2) Airway Farms – Taller del Rancho Five Points; 3) Compañía Química TMT en la Avenida Oakland; y 4) Rancho Duster de Airway Farms cerca de Huron.

EFFECTOS AMBIENTALES SIGNIFICATIVOS ANTICIPADOS: El Borrador PEIR identifica impactos significativos en las siguientes áreas temáticas ambientales: estética, recursos agrícolas, calidad del aire, recursos biológicos, recursos culturales y culturales tribales, recursos paleontológicos, peligros y materiales peligrosos, hidrología y calidad del agua, ruido, servicios públicos y transporte. La implementación del VCIP resultaría en impactos significativos e inevitables relacionados con la estética y los recursos agrícolas. Los impactos restantes mencionados anteriormente se mitigarían a niveles menos que significativos mediante la implementación de medidas de mitigación identificadas en el Borrador PEIR.

DISPONIBILIDAD DEL DOCUMENTO: El Borrador PEIR está disponible para revisión en los siguientes lugares:

- Oficina Principal del Distrito de Agua de Westlands, 286 W. Cromwell Avenue, Fresno, CA 93711.
- Oficina de Campo del Distrito de Agua de Westlands, 23050 W. Mt. Whitney Avenue, Five Points, CA 93624.
- Biblioteca Principal del Condado de Fresno, 2420 Mariposa Street, Fresno, CA 93721.
- Sucursal de Mendota de la Biblioteca del Condado de Fresno, 1246 Belmont Avenue, Mendota, CA 93640.
- Sucursal de Firebaugh de la Biblioteca del Condado de Fresno, 900 “O” Street, Firebaugh, CA 93622.
- Sucursal de Kerman de la Biblioteca del Condado de Fresno, 15081 W. Kearney Plaza, Kerman, CA 93630.
- Sucursal de San Joaquin de la Biblioteca del Condado de Fresno, 8781 Main Street, San Joaquin, CA 93660.
- Sucursal de Tranquillity de la Biblioteca del Condado de Fresno, 25561 Williams Street, Tranquillity, CA 93668.
- Biblioteca de Huron, 36050 “O” Street, Huron, CA 93234.
- Biblioteca de Coalinga, 305 N. 4th Street, Coalinga, CA 93210.

Una versión electrónica puede descargarse del sitio web del Distrito: <http://wwd.ca.gov/news-and-reports/environmental-docs/>

PERÍODO DE REVISIÓN PÚBLICA: El período de revisión pública de 45 días para el Borrador PEIR comienza el 31 de julio de 2025 y termina el 15 de septiembre de 2025. Los comentarios sobre el Borrador PEIR deben ser recibidos por el Distrito a más tardar a las 5:00 PM del 15 de septiembre de

2025 para ser abordados en el PEIR Final. Los comentarios escritos pueden enviarse por correo o correo electrónico a la atención de Russ Freeman, Asesor Jurídico Adjunto, a la siguiente dirección:

Distrito de Agua de Westlands

286 W. Cromwell Avenue

Fresno, CA 93711

P.O. Box 5199

Fresno, CA 93755

Correo electrónico: rfreeman@wwd.ca.gov

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VALLEY CLEAN INFRASTRUCTURE PLAN (VCIP)

STATE CLEARINGHOUSE NO. 2024020124

Prepared for

WESTLANDS WATER DISTRICT

**P.O. BOX 5199
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Prepared by

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JULY 2025

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ACRONYMS AND ABBREVIATIONS – 1

AADT	Annual Average Daily Traffic
AB 32	Assembly Bill 32 (California Global Warming Solutions Act of 2006)
AC	alternating current
ADA	Americans with Disabilities Act
ADT	Average Daily Traffic
AF or af	acre-feet
AFY or afy	acre-feet per year
ALUC	Airport Land Use Commission
ALUCP	Airport Land Use Compatibility Plan
APN	Assessor's Parcel Number
BESS	Battery Energy Storage System
BMPs	best management practices
Btu	British Thermal Unit
CAISO	California Independent System Operator (also Cal ISO)
Cal-EPA	California Environmental Protection Agency
CAL FIRE	California Department of Forestry and Fire Protection
CalGEM	California Department of Conservation (CDOC), Geologic Energy Management Division
CALGreen	California Green Building Standards Code
Cal/OSHA	California Occupational Safety and Health Administration
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CAP	Climate Action Plan
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CBC	California Building Code
CBSC	California Building Standards Commission
CCR	California Code of Regulations
CDC	Centers for Disease Control
CDFW	California Department of Fish and Wildlife
CDOC	California Department of Conservation
CDOJ	California Department of Justice
CDPH	California Department of Public Health
CDPR	California Department of Pesticide Regulation
CDWR	California Department of Water Resources
CEC	California Energy Commission
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CEQA	California Environmental Quality Act
CFC	California Fire Code
CGS	California Geological Survey
CHJUSD	Coalinga/Huron Joint Unified School District
CHP	California Highway Patrol
CNDDb	California Natural Diversity Data Base
CNEL	community noise equivalent level
CO ₂ e	Carbon Dioxide Equivalents
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
CUPA	Certified Unified Program Agency
CVP	Central Valley Project

ACRONYMS AND ABBREVIATIONS – 2

CVRWQCB	Central Valley – Regional Water Quality Control Board
CWA	Clean Water Act
cy	cubic yards
dB	decibels
dBA	decibels in “A-weighted” scale
DC	direct current
District	Westlands Water District
DOC	California Department of Conservation
DOD	Department of Defense
DPR	California Department of Pesticide Regulation
DTSC	California Department of Toxic Substances Control
DWR	California Department of Water Resources
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulations
FCOG	Fresno Council of Governments
FCFPD	Fresno County Fire Protection District
FEMA	Federal Emergency Management Agency
FHSZ	Fire Hazard Severity Zone
FIRM	Flood Insurance Rate Map
FMMP	Farmland Mapping and Monitoring Program
LRA	Local Responsibility Area
FSZ	Farmland Security Zone
g	gravity - unit of ground acceleration; 1.0 g = force of gravity
GHG	greenhouse gas
gpd	gallons per day
GPUSD	Golden Plains Unified School District
GSA	Groundwater Sustainability Agency
GSP	Groundwater Sustainability Plan
HCP	Habitat Conservation Plan
HMBP	Hazardous Materials Business Plan
ICC	International Code Council
IEEE	Institute of Electrical and Electronic Engineers
I&R	Illingworth & Rodkin
IFC	International Fire Code
IOU	Investor Owned Utility
IS/MND	Initial Study/Mitigated Negative Declaration
ISR	Indirect Source Review
JLUS	Joint Land Use Study (NAS Lemoore)
kV	kilovolt (unit of electrical potential)
L _{dn}	day-night average noise level
L _{eq}	equivalent hourly average noise level
L _{max}	maximum instantaneous noise level
LAMP	Local Agency Management Program

ACRONYMS AND ABBREVIATIONS – 3

LCI	Governor’s Office of Land Use and Climate Innovation (formerly OPR)
LOA	Live Oak Associates
LOS	Level of Service
M&I	Municipal and Industrial (water supply)
MBTA	Migratory Bird Treaty Act
MM	Mitigation Measure
MMT	Million Metric Tons
MND	Mitigated Negative Declaration
MW	Megawatt
NAHC	Native American Heritage Commission
NASL	Naval Air Station Lemoore
NEC	National Electric Code
NEPA	National Environmental Policy Act
NERC	North American Electricity Reliability Corporation
NESC	National Electric Safety Code
NFIP	National Flood Insurance Program
NFPA	National Fire Protection Association
NIOSH	National Institute for Occupational Safety and Health
NOD	Notice of Determination
NOI	Notice of Intent
NOP	Notice of Preparation
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NPIC	National Pesticide Information Center
OEHHA	California Office of Environmental Health Hazard Assessment
OES	State Office of Emergency Services
O&M	operations and maintenance
OPR	Governor’s Office of Planning and Research (renamed Governor’s Office of Land Use and Climate Innovation (LCI) as of July 1, 2024)
OSHA	Occupational Safety and Health Administration
OWTS	Onsite Wastewater Treatment System
PEIR	Program (or Programmatic) Environmental Impact Report
PCS	Power Conversion System
PG&E	Pacific Gas and Electric Company
POI	Point of Interconnection
PPA	Power Purchase Agreement
PPV	Peak Particle Velocity (vibration measure)
PRC	California Public Resources Code
PV	photovoltaic
RCRA	Resource Conservation and Recovery Act
ROW	Right of Way
RPS	Renewables Portfolio Standard
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SCADA	Supervisory Control and Data Acquisition
SCAQMD	South Coast Air Quality Management District

ACRONYMS AND ABBREVIATIONS – 4

SCE	Southern California Edison
SEMS	Standardized Emergency Management System
SGF	Solar Generating Facility
SGMA	Sustainable Groundwater Management Act
SHPO	State Historic Preservation Office
SJVAPCD	San Joaquin Valley Air Pollution Control District
SoCalGas	Southern California Gas Company
SR	State Route
SRA	State Responsibility Area
SRP	Soil Reclamation Plan
SSC	species of special concern
SWMP	Solid Waste Management Plan
SWP	State Water Project
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	Toxic Air Contaminant
TCP	Traditional Cultural Place
TCR	Tribal Cultural Resource
USA	Underground Service Alert
USACE	U.S. Army Corps of Engineers
USBR	U.S. Bureau of Reclamation
USDOT	U.S. Department of Transportation
USEIA	U.S. Energy Information Administration
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VdB	vibration velocity level in decibels
VMT	Vehicle Miles Traveled
WAC	Williamson Act Contract
WAPA	Western Area Power Administration
WECC	Western Electricity Coordinating Council
WESD	Westside Elementary School District
WRP	Water Resources Planning
WSA	Water Supply Assessment
WSREC	University of California – West Side Research and Extension Center
WWD	Westlands Water District (also “District”)

ES. EXECUTIVE SUMMARY

ES.1. INTRODUCTION

This Programmatic Environmental Impact Report (PEIR) has been prepared by consultants on behalf of the Westlands Water District (District) as Lead Agency in conformance with the California Environmental Quality Act (CEQA) to inform the public, decision-makers, and other public agencies of the potentially significant environmental impacts associated with implementation of the proposed plan under consideration.

Valley Clean Infrastructure Plan (VCIP)

This PEIR assesses the potentially significant environmental effects related to adoption and long-term implementation of the proposed Valley Clean Infrastructure Plan (VCIP, Project, or Plan). The proposed VCIP would provide the policy and planning framework for the implementation of renewable energy projects within the Fresno County portion of the District’s service area (Plan Area) that would be located on private and District-owned lands within identified Development Focus Areas (DFAs). Such projects would involve the long-term but temporary repurposing of farmlands within the DFAs for clean energy generation, storage, transmission, and other ancillary and supportive uses. AB 2661 (2024) authorizes the District’s to advance these uses within the District’s boundaries. AB 2661 recognizes the “unique need of the Westlands Water District to support the development of solar electrical generation for the electrical grid and to facilitate the development of transmission capacity to help California reach its clean energy and climate goals.”

AB 2661 was approved on September 25, 2024, and is codified as Water Code sections 37860-37861. It specifically authorizes the District to: (1) provide, generate, and deliver solar photovoltaic electricity, and construct, operate, and maintain any and all works, facilities, improvements, and property, or portions thereof, necessary or convenient for generating and delivering that electricity; (2) construct, operate, and maintain an energy storage system, as defined in section 2835 of the Public Utilities Code, and all works, facilities, improvements, and property, or portions thereof, necessary or convenient for the operation of an energy storage system, within the boundaries of the District; and (3) construct, operate, and maintain electrical transmission lines and all works, facilities, improvements, and property, or portions thereof, necessary or convenient for the conveyance of electricity within the boundaries of the District. While unrelated to the CEQA process, AB 2661 also requires that the District establish a community benefits agreement plan for the VCIP and related projects, with specific benefits to include but not limited to: job creation and training programs for local residents, use of local businesses and vendors, and financial contributions to community development projects and programs (Wat. Code, section 37860(b)-(d)).

Sustainable Groundwater Management Act (SGMA)

In September 2014, Governor Brown signed the Sustainable Groundwater Management Act (SGMA). The goal of the legislation is to, among other things, provide for the “sustainable management” of California’s groundwater basins (i.e., the management and use of groundwater in a manner that can be maintained during SGMA’s planning and implementation horizon without causing specified “undesirable results”) and to “enhance local management of groundwater.” (Wat. Code, §§ 10720.1, 10721(v).) As the primary water purveyor in the Subbasin, the District is the designated Groundwater Sustainability Agency (GSA) for the Westside Subbasin (Subbasin). DWR has designated the Subbasin as a critically overdrafted basin. The District, in cooperation with Fresno County, prepared the “Westside Subbasin Groundwater Sustainability Plan” (the

GSP), which was adopted by both agencies in January 2020. The purpose of the GSP is to characterize groundwater conditions in the Subbasin, evaluate and report on conditions of overdraft, establish sustainability goals and sustainability management criteria, and describe projects and management actions the GSA intends to implement to achieve sustainability by 2040.

The 2025 Amendment to the GSP focuses on groundwater management actions that may be implemented by the GSA to achieve sustainability by 2040. GSP Project No. 6, “Agricultural Land Repurposing,” identifies the proposed VCIP and the District’s Strategic Plan as initiatives to promote groundwater sustainability in the Subbasin. The District’s Strategic Plan outlines key strategies to ensure the District achieves long-term groundwater sustainability, preserves economic opportunities for growers and the communities, and protects against undesirable results, such as subsidence. Regarding the proposed VCIP, the GSP provides: “The VCIP is an initiative that focuses on expanding clean and renewable energy infrastructure within California’s Central Valley. It aims to support the region’s transition to more sustainable energy sources while addressing environmental and economic challenges. . . . The VCIP seeks to align energy development with goals of sustainability and resilience, including the reduction of carbon emissions and groundwater sustainability.” Consistent with the VCIP’s project description, the GSP further provides: “The District’s objective with VCIP is to repurpose drainage-impaired and other agricultural lands for the generation of clean energy to promote enhanced agricultural productivity within the District.” Overall, the GSP determined that these agricultural land repurposing programs would “enhance the long-term sustainability of groundwater resources by addressing both water use reduction and regional economic transition, ensuring groundwater sustainability, and fostering environmental and community resilience” (DWR 2025).

In furtherance of SGMA implementation for the Subbasin, this PEIR evaluates the potential physical environmental effects of renewable energy and infrastructure projects developed under the proposed VCIP as authorized by AB 2661.

ES.2. OVERVIEW OF THE VCIP

Consistent with the mission of the District to provide timely, reliable, and affordable water service to landowners and water users in western Fresno and Kings Counties, the proposed VCIP is intended to provide an overall plan to guide and facilitate beneficial temporary but long-term repurposing of private and District-owned lands within the proposed DFAs, through proposals by Golden State Clean Energy (GSCE) and any other potential project proponents to develop clean energy generation, storage, transmission, and other ancillary and supportive energy uses in a manner that furthers the District’s mission.

The proposed VCIP is a regional non-regulatory master planning tool for the structure and major components of clean energy projects in the Plan Area, involving potential construction of transmission lines, generation tie lines, substations and related infrastructure for conveyance of clean energy, and the actual generation and storage of clean energy, subject to permits or land use entitlements issued by other public agencies with regulatory authority. For the District’s planning purposes, the VCIP and its potential clean energy projects are subject to CEQA review as the “whole” of the proposed “action” in relation to decisions the District may make in evaluating and approving its own policy decisions and transactions, and to inform future permitting and regulatory proceedings.

The VCIP is intended to achieve a number of water supply and energy-related objectives (see Section 2.2), and includes two main elements:

- 1) Energy Resource Plan – This element identifies specific areas within the Plan Area (see Figure ES-1) that have been identified for potential renewable energy development, including solar photovoltaic (PV) facilities with integrated energy storage systems (ESS), along with typical supporting facilities such as Operations and Maintenance (O&M) facilities and project substations. Separate ESS facilities located outside of solar projects and dedicated solely to energy storage are also included in the Plan.
- 2) Infrastructure Plan – This element consists of the transmission facilities and collection substations required for the collection of solar generation within the Plan Area, and for the delivery of renewable energy to electricity markets in California. The energy produced at the solar facilities would be transferred to generation tie-lines (gen-tie lines) for conveyance to one of five new collection substations to be distributed throughout the Plan Area. The collection substations would provide for interconnection to the state and federal power systems for delivery of the solar generation outside the VCIP.

Plan Area Definition

The Plan Area for the VCIP encompasses the entire Fresno County portion of the District's service area. This area comprises a total of about 534,800 acres within the District's approximately 614,700-acre overall service area. Solar and infrastructure development within the Kings County portion of the District's service area is covered by the Westlands Solar Park Master Plan, which was adopted by the District's Board of Directors on January 16, 2018. No additional lands within the Kings County service area have been identified for potential clean energy development as part of the VCIP.

Development Focus Areas (DFAs)

Within the defined Plan Area, approximately 136,000 acres have been identified as DFAs. These lands, which are suitable for clean energy development, include the following: (1) approximately 72,000 acres of District-owned land; and (2) approximately 64,000 acres of privately-owned lands for which the landowners have expressed interest in clean energy facilities. The 136,000 gross acres in the DFAs would accommodate the contemplated generation capacity of up to 21,000 megawatts (MW) under the proposed VCIP. (This is based on the current average development intensity for PV solar of about 6.5 gross acres per MW, which includes solar PV generation and energy storage facilities, substations, and other ancillary facilities).

ES.3. PROJECT OBJECTIVES OF THE VCIP

The proposed VCIP is intended to fulfill the following overall goals of the project proponents: (1) the District's mission of water supply reliability/water service efficiency; and (2) state and GSCE goals for renewable energy, in addition to objectives related to water supply, energy, climate change, and economic development. The specific project objectives of each of the project proponents are set forth below.

Westlands Water District

- Utilize the District's location, topography, and excellent insolation (solar radiation energy) attributes to promote the siting of solar generation, storage, and transmission of renewable energy, in furtherance of federal, state, and local renewable energy and carbon reduction goals over approximately the next 35 years.

- Balance the promotion of long-term but temporary development of solar energy projects and associated storage and transmission facilities with the protection of environmental resources, which may include, among other things, protection of agricultural, biological, cultural, and water resources.
- Avoid or substantially reduce environmental impacts associated with solar development, construction, and operation through low-impact design, short construction timeline with minimal ground disturbance, low amounts of impervious surfaces, the continued use of existing habitat by present wildlife, co-location of energy and agricultural activities where practicable.
- Ensure financing of decommissioning and site reclamation at the end of the project life in order to restore the site to conditions suitable for agricultural use.
- Utilize existing facilities, roads, and other infrastructure to the extent feasible.
- Identify preferred transmission corridors to efficiently convey renewable energy from VCIP projects to the statewide electricity market and reduce dependence on, and environmental impacts such as wildfire risk associated with, long-distance transmission.
- Contribute to the solution of reduced water supply reliability by (i) providing productive long-term but temporary repurposing of those lands from irrigated agriculture and for renewable energy production, and (ii) ensuring irrigated agriculture on the repurposed lands can be restored following the decommissioning of the renewable energy projects, particularly with advancement of water conservation and irrigation technologies.
- Facilitate implementation of the Sustainable Groundwater Management Act (SGMA) by: (i) contributing to the conjunctive use of groundwater for irrigation; (ii) promoting drought resiliency, (iii) reducing the likelihood of undesirable results like subsidence, including in the vicinity of sections of the San Luis Canal/California Aqueduct, and (iv) implementing the VCIP pursuant to the Westside Subbasin Groundwater Sustainability Plan (GSP) in conjunction with other agricultural land repurposing management actions.
- Address the chronic shortage of CVP contract water deliveries by promoting repurposing of farmland and by facilitating the redirection of scarce surface water allocations to other productive agricultural land within the District.
- Provide utility-scale power generation on farmland that has been fallowed or removed from irrigated agriculture due to lack of a reliable surface water supply, which reduces pressure to develop renewable energy on prime agricultural land elsewhere. Promote expeditious and efficient repurposing of farmlands through a comprehensive planning process to address transmission capacity constraints on further incremental clean energy development in the District.
- 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).

- Contribute to overall reduction in greenhouse gas emissions by generating electricity that is not based on the combustion of fossil fuel.
- 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 job creation and training programs for local residents, use of local businesses and vendors, financial contributions to community development projects and programs, and increased property tax and sales tax revenues.

Golden State Clean Energy

- Help implement the state's Global Warming Solutions Act of 2006 (AB 32), as supplemented in 2016 by SB 32, by facilitating the development of up to 21,000 MW of non-fossil fuel based sources of electricity that will replace existing fossil-based generation and thereby contribute to achieving the state's goal of carbon neutrality by 2045.
- Provide new sources of energy storage that support the state in achieving its renewable energy and carbon neutrality targets, and provide transmission facilities for conveying the renewable energy to the state's electrical load centers.
- Potentially provide the District with a direct source of renewable energy for operation of the District's Groundwater Management Program wells, filtration booster pumps, and other District owned facilities.
- Provide for utility-scale energy generation on disturbed lands which provide minimal habitat value for wildlife.
- Provide the foundation for a renewables development program which will generate an average of 6,000 construction jobs for at least 10 years, in addition to approximately 800 permanent jobs and approximately 400 part-time jobs upon the VCIP buildout.
- Promote local hiring by establishing a job creation and training program for local residents.
- Positively contribute to the local economy through stimulation of economic activity such as creation of secondary multiplier employment and local procurement of equipment, goods and services.
- Provide community benefits through increased property tax revenues and increased sales tax receipts through local procurement and establishment of local points of sale for materials sourced from outside the area.

ES.4. OVERVIEW OF THE VCIP COMPONENTS

The main components of the VCIP are summarized below. The conceptual plan for clean energy development and transmission infrastructure is shown in Figure ES-1. The various components of VCIP are described in greater detail Chapter 2. *Project Description*.

ES.4.1. ENERGY RESOURCE PLAN

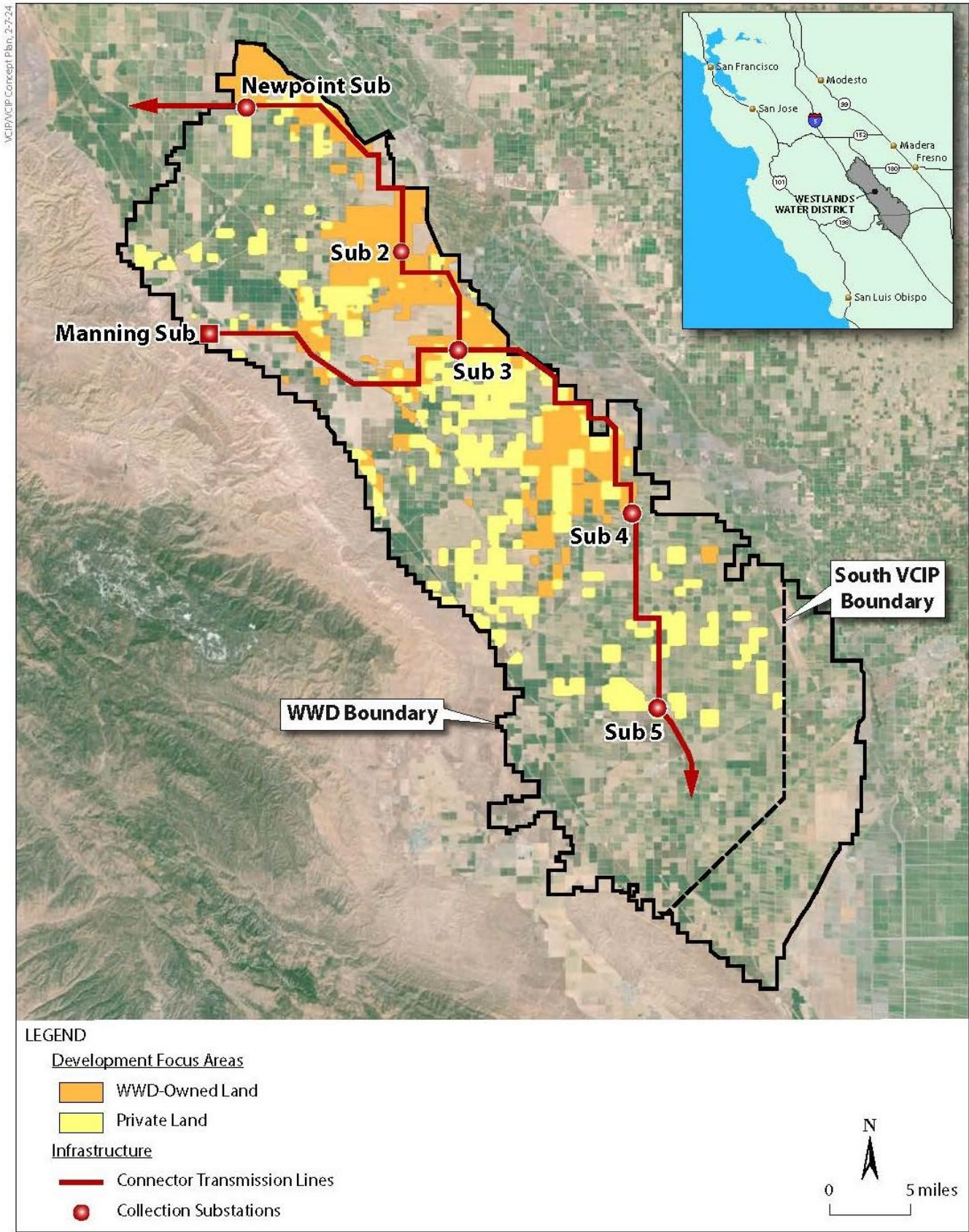
The primary components of the Energy Resource Plan consist of clean energy development in the form of: (1) solar PV generating facilities; and (2) stand-alone energy storage facilities, as described in turn below.

1. Solar PV Generating Facilities

The individual solar PV facilities would range in size from 100 MW (on approximately 640 acres) to about 1,150 MW (on approximately 7,500 acres), with the latter representing the approximate maximum generation that can be accommodated by a double-circuit 230-kV gen-tie line. It is assumed that a typical solar PV facility would have a generating capacity of 250 MW and would occupy about 1,600 acres. This project size represents the approximate upper limit for project size that is manageable for construction contractors and for financing. It is assumed that each solar facility would include an on-site battery energy storage system (BESS) integrated into the project design with a maximum storage capacity equivalent to the facility's generation capacity. A typical facility could include up to 250 MW of storage. Currently, these facilities would likely utilize lithium-ion batteries but could include other technologies as described in Section 2.4.1.2. It is noted that while incorporation of energy storage facilities as an integral component of solar generating facilities has become standard, it is also likely that some potential VCIP projects would include solar facilities with smaller energy storage capacities or may have no on-site energy storage. However, it is unlikely that the typical 250-MW solar facility would include more than 250 MW of energy storage facilities. For purposes of this PEIR, it is assumed that the typical 250-MW solar PV facility will include 250 MW of energy storage. Each solar facility would also include O&M facilities, and an on-site 230-kV substation, which would convey the solar generation to a gen-tie line (described subsequently).

2. Energy Storage Facilities

As an alternative to co-locating and integrating the BESS facilities with the solar PV facilities, the VCIP also contemplates up to 10,000 MW of stand-alone energy storage facilities (with a total storage capacity of up to 40,000 MW hours) which would operate independently of solar generation facilities, and which would occupy a total combined land area up to approximately 500 acres. These facilities would provide temporary storage for solar power generated at off-site solar facilities, and would dispatch the stored power to the electrical grid when needed. It is anticipated that each stand-alone energy storage facility would have up to 1,150 MW of storage with a capacity of 4 hours per MW, or a total capacity of 4,600 MW hours (MWh), although advances in battery technology would allow for longer duration of storage per MW. The locations of these stand-alone energy storage facilities have not been determined, but it is anticipated that they would be located near the VCIP collection substations described below in order minimize the length of gen-tie lines. Currently, a typical energy storage facility would likely utilize lithium-ion batteries, but other storage technologies could be employed, as discussed in Section 2.4.1.2. The VCIP BESS facilities would be manufactured, installed, and maintained in accordance with all applicable fire codes and product standards. The BESS facilities would also be subject to testing pursuant to recent industry-standard test methods designed by UL Solutions (UL) to demonstrate compliance with all applicable fire safety and building code requirements for BESS systems.



Base map: Google Earth 2024

ES.4.2. INFRASTRUCTURE PLAN

The primary components of the proposed VCIP Infrastructure Plan consist of transmission and interconnection facilities, including: (1) Gen-Tie Lines; (2) Collection Substations; and (3) Connector Transmission Lines within the VCIP. These infrastructure facilities are described in turn below.

1. Gen-Tie Lines

Each solar PV generating facility and stand-alone energy storage facility would be served by a 230-kV generation-interconnection tie-line (gen-tie line) which would convey the generated power to one of five 500/230-kV collection substations within the VCIP. The gen-tie lines would branch out from each collection substation to serve the solar and energy storage facilities in the vicinity. The precise alignments of the gen-tie lines would depend on the size, location and timing of solar and energy storage projects as they are planned to come on-line.

2. Collection Substations

The Infrastructure Plan includes five collection substations which would be distributed from north to south along the backbone transmission corridor running through the eastern portion of the Plan Area (described below). These 500/230-kV substations would serve as collection points for power generated in the surrounding DFAs as received from the gen-tie network and would provide interconnection to the state and federal power systems. It is expected that each collection substation would accommodate approximately 4,000 MW of solar power generated at solar facilities occupying an average of about 26,000 acres around each substation. Each collection substation is anticipated to have a footprint of about 60 acres, to be located within a larger site of about 160 acres which would provide sufficient buffer area to accommodate the convergence of incoming gen-tie lines from the nearby solar generation and energy storage facilities.

It is noted that a new substation (Manning) is currently proposed within the VCIP Plan Area on the south side of W. Manning Avenue, approximately 2 miles west of I-5. The planned Manning Substation is currently in the CPUC approval process and is scheduled to be in service in June 2028. The Manning Substation is intended to add resilience to the larger electrical grid and will be constructed with or without the VCIP solar development. The CPUC approval process includes a CEQA-equivalent environmental review process which is independent of this PEIR. As such, the Manning Substation project is not part of the VCIP and is not covered in this PEIR except as a cumulative project. It is anticipated that up to 1,100 MW of VCIP solar generation, from 7,000 acres of solar facilities in the west-central portion of the Plan Area, would be conveyed to the state power grid through the Manning Substation.

3. Connector Transmission Lines within the VCIP

The five collection substations within the VCIP would be connected by a backbone transmission corridor running through the eastern portion of Plan Area in a northwest-southeast direction. This corridor would have a total length of approximately 59 miles and would collect VCIP-generated power and provide interconnection to the state and federal power systems.

It is anticipated that the VCIP connector transmission corridors would include up to two parallel 500-kV transmission lines within 1,000-foot wide corridors. The two parallel lines would require a combined right-of-way of approximately 450 feet, with the additional width included to provide equipment maneuvering space during construction as well as design flexibility at the engineering stage.

In addition, a central transmission corridor is planned to run east-west through the Plan Area to provide connection between the VCIP backbone corridor at Substation No. 3 and the new Manning Substation planned for the vicinity of W. Manning Avenue and Interstate 5. This connecting transmission corridor would be approximately 20 miles long and would provide an alternative path for energy exported from the VCIP to connect to the larger grid and provide redundancy and resilience to the system. As noted above, the Manning Substation is not part of the VCIP; however, the 20-mile connecting transmission line connecting the VCIP to the Manning Substation is part of the VCIP.

ES.4.3. VCIP DEVELOPMENT TIMELINE AND PHASING

It is anticipated that the VCIP solar facilities and infrastructure would be completed within an 11-year development period, with construction planned to start in 2028 and with full buildout anticipated in 2038. The VCIP development is planned to progress incrementally from north to south, such that solar PV and energy storage projects and their associated gen-tie lines would be constructed in conjunction with the incremental completion of collection substations and collector transmission lines, as they are extended southward through the Plan Area. For example, the DFAs around the Newpoint Substation in the north would be developed first, followed in subsequent years by development of DFAs around Substation 2, and so forth. In the early years, the development pace is expected to reach 2,300 MW per year, which will diminish slightly over time and result in an average annual development pace of about 2,000 MW. It is important to note that given the length of time required to complete the initial infrastructure improvements (e.g., the Newpoint Substation will require two years to complete, beginning in 2028), the solar PV projects are not planned to begin construction until a year later (e.g., 2029). Therefore, the buildout of the proposed Energy Resource Plan would be expected to occur over 10 years (e.g., 2029 through 2038).

It is recognized that the location and timing of individual solar and energy storage projects within the VCIP 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 delivery facilities, which may vary from the sequence described above. However, the timeline and phasing concept presented above represents the District's best efforts to identify the most reasonably foreseeable scenario for purposes of analysis in the PEIR.

ES.4.4. TRANSMISSION DELIVERY LINES OUTSIDE THE VCIP

The development of renewable energy projects under the VCIP will drive the need for new transmission development outside the Plan Area to deliver the VCIP renewable generation to load centers in northern and southern California. As shown in Figure ES-2, these transmission delivery corridors extend far beyond the District's boundaries and are not part of the proposed VCIP. Since the planning and programming of these outside transmission lines will require coordinated efforts of Westlands Water District and potentially multiple state and federal agencies and utilities, it is speculative and premature to undertake specific route planning or design for such bulk transmission facilities. The conceptual transmission routes identified in this PEIR therefore have not been evaluated for the specific locations, constructability, desirability, cost, or likelihood of their successful permitting. They also have not been studied by transmission planning groups to identify their effects on other transmission systems.

However, the PEIR includes a conceptual description of potential transmission routes outside the Plan Area to allow a general discussion of environmental impacts associated with transmission line development for informational purposes. Based on preliminary power flow studies, the amount of generation that would be delivered to the regional load centers was estimated, which allowed the development of a conceptual plan of transmission routing and capacities that would be required to deliver renewable generation from the VCIP to the load centers.



Source: Google Earth 2024

Conceptual Transmission Corridors
Figure ES-2

Although no specific transmission routes or substation upgrades outside the Plan Area have been defined, it is assumed for conceptual planning purposes that the required new transmission lines would run adjacent to existing transmission corridors to major regional substations at the load centers. Specifically, it is assumed that these outside transmission corridors would extend north to the Tesla Substation and the Tracy Substation, west to the Moss Landing Substation, and south to the Midway Substation and the Vincent Substation (see Figure 2.4-1).

ES.5. SUMMARY OF ENVIRONMENTAL REVIEW

ES.5.1. 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.

A Program EIR allows for a more comprehensive and coordinated consideration of effects and alternatives than would be practical for an EIR on separate individual actions, and ensures consideration of cumulative impacts that might be missed on a case-by-case basis. A Program EIR is not intended to examine the specific environmental effects associated with individual actions that may be undertaken under the larger program but are presently unforeseeable and would be determined at the project level. Subsequent environmental review may be required for later activities within the program pursuant to CEQA Guidelines section 15168(c) if they may result in effects not evaluated in the Program EIR.

ES.5.2. OVERVIEW OF ENVIRONMENTAL IMPACTS

Sections 4.1 through 4.18 in Chapter 4, *Environmental Impact Analysis*, provide a detailed discussion of the environmental setting; direct, indirect, and cumulative impacts of the VCIP; and mitigation measures designed to avoid or substantially lessen potentially significant impacts to the extent feasible. Potential impacts related to the environmental topics identified in CEQA Guidelines Appendix G have been evaluated.

Issue Determined to Have No Impact

During the course of the District’s scoping process for this PEIR, it was determined that no potentially significant impacts are expected relative to the topic of “Recreation.” Therefore, this topic was not evaluated in detail in the PEIR but is briefly discussed Chapter 5, *Effects Found Not To Be Significant*.

Topics Found to Have Less Than Significant Impacts

VCIP implementation would have a less-than-significant impact, or a less-than-significant impact with the implementation of mitigation measures, in the following environmental categories:

- Air Quality
- Biological Resources
- Cultural and Tribal Cultural Resources
- Energy
- Forestry Resources

- Geology, Soils and Paleontological Resources
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Transportation
- Utilities and Service Systems
- Wildfire

Significant and Unavoidable Impacts

Section 15126.2(c) of the CEQA Guidelines requires that the EIR describe any significant impacts, including those that can be mitigated but not reduced to less-than-significant levels. The VCIP implementation would result in significant and unavoidable impacts in the following environmental topic areas:

- Aesthetics
- Agricultural Resources

Growth-Inducing Effects of the Proposed Project

CEQA Guidelines section 15126(d) requires each EIR to discuss the potential “growth-inducing impact of the proposed project.” Section 15126.2(e) of the CEQA Guidelines provides that the growth-inducing impact of a project shall 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 wastewater treatment plant might, for example, allow for more construction in service areas). Increases in the population may tax existing community service facilities, requiring 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 implementation of the VCIP Energy Resource and Infrastructure Plans are discussed below.

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 potable water and sanitary sewer lines to previously unserved areas can facilitate development of additional lands to the extent that surplus capacity is available in the lines.

VCIP implementation would involve construction of supporting infrastructure such as gen-tie lines, collection substations, and connecting transmission lines to deliver the generated power to the electrical grid. This

infrastructure would be sized to accommodate only the collection and delivery of electrical generation from potential VCIP solar and Battery Energy Storage System (BESS) facilities. There would be no surplus infrastructure capacity that could serve additional electrical generation beyond that planned under the VCIP. VCIP implementation would not involve extensions of potable water or sanitary sewer lines. Therefore, the VCIP infrastructure elements 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 also indirectly increase pressure for similar land use changes that would authorize the conversion of adjacent or nearby lands. Since no change in land uses or zoning designations would be required for VCIP development, approval of the VCIP would not set a precedent which might indirectly increase pressures for conversion of other lands. Therefore, the VCIP implementation 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. Upon full buildout of the VCIP, the solar/BESS facilities would include a total of approximately 800 permanent on-site operations staff plus about 400 occasional maintenance staff. This increase in permanent and part-time employment would occur incrementally as the VCIP facilities come online over the 10-year development period. Once fully operational, the energy and infrastructure facilities would require minimal materials or equipment. The economic stimulus resulting from VCIP facility operation would be relatively modest, resulting mainly from incremental employment growth, and would not be sufficient to induce additional growth in the region.

Population and Housing Growth

The potential VCIP energy and infrastructure facilities would not include residential components, so they would not directly induce population growth in the Plan Area or its vicinity. Non-residential 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. During construction of the VCIP facilities, it is expected that construction workers would be drawn from the local labor pool and that few workers would migrate to the area. It is expected that the permanent staff of each VCIP facility would almost entirely consist of existing residents in the area, although some specialized technical or supervisory personnel may transfer to the area if it is not feasible to hire locally. Thus, potential VCIP development may result in a slight increase in demand for housing locally. But this slight increase would be consistent with population projections contained in the 2024 Fresno County General Plan and other regional planning documents (see Section 4.14. *Population and Housing*). It is expected that there will be an adequate supply of rental units to meet any incremental demand resulting from VCIP construction and operation. Therefore, any population and housing growth induced by VCIP implementation would be insubstantial.

Increased Power Generation

The VCIP solar facilities would add to the state's overall energy supply, which indirectly supports growth and development. However, the PV generation from implementation of the VCIP is intended to help meet the state's renewable energy targets under the Renewables Portfolio Standard (RPS) by replacing fossil-fueled generation with renewable generation. While the generation capacity that would be added by VCIP solar facilities to the state grid may be growth accommodating, the added generation would not remove any infrastructure obstacle or constraint to growth and therefore would not be considered growth inducing.

Significant Irreversible Environmental Changes

CEQA Guidelines section 15126(d) requires a discussion of the significant irreversible changes that would result from implementation of a proposed project and provides: "Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible since a large commitment of such resources makes removal or nonuse thereafter unlikely." It further provides that primary impacts, and particularly secondary impacts such as providing transportation access to previously inaccessible areas generally commit future generations to similar uses. Section 15126.2(d) also provides that irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified.

As discussed in Chapter 7. *Other CEQA Considerations*, the implementation of the VCIP would use and consume nonrenewable building materials and non-renewable energy resources. Use of nonrenewable materials and energy sources represents an irretrievable commitment of resources. However, the VCIP solar/BESS facilities would allow the decommissioning of fossil-fueled generating stations elsewhere. 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 VCIP solar facilities. Therefore, implementation of the VCIP Energy Resource and Infrastructure Plans would not result in a significant irretrievable commitment of nonrenewable resources.

The VCIP facilities would not include the construction of public roadways or highways that could be used to provide public access to previously inaccessible areas. Thus, VCIP implementation would not result in indirect commitment of resources in the development of such previously inaccessible areas.

VCIP infrastructure such as the collection substations and connecting transmission lines would likely be retained as part of the state grid where they would serve a vital role in providing resilience and redundancy by providing alternative transmission pathways and to help avoid congestion on the overall grid. The use of the contemplated collection substations and connecting transmission lines would essentially be permanent. However, these facilities would transmit significant quantities of renewable resources, which would more than offset the consumption of nonrenewable resources associated with the collection substations and outside transmission lines. Therefore, implementation of the VCIP would not result in significant irreversible environmental changes in this regard.

A project would result in significant irreversible environmental changes if the project involves uses in which irreversible damage could reasonably foreseeably result from any potential environmental accidents associated with the project. Construction and operation of the VCIP facilities would involve the use of hazardous materials such as fuels, toxic materials imbedded in solar panels, and there are potential fire hazards associated with BESS facilities. However, all VCIP activities and facilities would be subject to regulations, codes, and industry-standard performance criteria designed to avoid and prevent potential contamination and environmental accidents. These applicable requirements would significantly reduce the likelihood and severity of accidents that could result in

irreversible environmental damage. Thus, the potential for permanent damage or contamination due to environmental accidents is insubstantial and is considered less than significant.

Therefore, implementation of the VCIP Energy Resource and Infrastructure Plans would not result in significant irreversible environmental changes.

ES.5.3. ALTERNATIVES TO THE PROPOSED PROJECT

To promote informed decision making, 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 4 of this PEIR, the potentially significant impacts associated with VCIP implementation – which would occur over an approximately 40-to-50-year period, consisting of 10 years of construction, followed by operation (approximately 35 years for each project), and decommissioning – can largely be avoided or mitigated to less than significant levels through the mitigation measures identified in this PEIR. The following alternatives are evaluated to provide a comparison of relative impacts between the alternatives and development under the proposed VCIP over this period.

ES.5.3.1. No Project Alternative

CEQA Guidelines section 15126.6(e)(1) requires that the “specific alternative of ‘no project’ shall...be evaluated along with its impact.” Chapter 6, *Alternatives*, includes a description and evaluation of the environmental impacts associated with the No Project Alternative, relative to existing conditions and the impacts resulting from the proposed project. This analysis also includes a discussion of the ability of the No Project Alternative to meet the District’s project objectives. The No Project Alternative assumes that incremental energy resource and infrastructure development and mitigation for such projects would continue to occur within the Plan Area on an ad hoc basis in the absence of a comprehensive plan for such development.

As discussed in Section 6.3.1., the No Project Alternative would result in lower levels of impact than VCIP implementation 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 biological resources, cultural and tribal cultural resources, geology, soils and paleontology, noise, public services, wastewater disposal, and solid waste disposal, although all these impacts would be less than significant or fully mitigable with VCIP implementation. The No Project Alternative would result in greater levels of impact than VCIP implementation in the categories of air quality, energy, greenhouse gas emissions, and water supply. In the categories of energy, greenhouse gas emissions, and water supply, the proposed VCIP would provide substantially greater environmental benefits compared to the No Project Alternative. The No Project Alternative would have similar levels of impact to VCIP implementation in terms of hazards and hazardous materials, hydrology and water quality, mineral resources, land use and planning, and wildfire. While VCIP implementation would result in significant and unavoidable impacts relative to aesthetics and agricultural resources, the No Project Alternative would also result in significant and unavoidable impacts relative to aesthetics and agricultural resources. Thus, the No Project Alternative would not eliminate or substantially reduce such significant and unavoidable impacts. Therefore, given their similar impacts and the VCIP’s distinct environmental benefits that would significantly advance the state’s carbon neutrality targets, the No Project Alternative is not an environmentally superior alternative to implementation of the proposed VCIP. Moreover, the No Project Alternative would not go as far as the VCIP in fulfilling the project objectives, as restated at the beginning of this chapter, particularly the objectives related to enhancing water supply reliability, facilitating SGMA implementation, and helping to meet the state’s

renewable energy and greenhouse gas reduction targets through long-term but temporary repurposing of farmland for the generation of fossil-free sources of electricity.

ES.5.3.2. Reduced Project Size Alternative

This alternative assumes that only 72,000 acres, which are owned by the District and have been removed from irrigated agriculture, would be included in DFAs for development of solar and energy storage facilities. (This area is shown in Figure 2.3-1 as “District-Owned Land.”) Renewable energy projects would not occur on the 64,000 acres of privately owned lands, as contemplated by the VCIP. Instead, these privately owned lands would remain in agricultural cultivation or fallowed. This alternative would have a generating capacity of approximately 11,000 MW, along with an equal amount of energy storage. The planned five substations and connecting transmission lines would remain in this alternative, albeit at approximately half of their planned capacities and sizes. It is assumed that construction of the Reduced Project Size Alternative would be phased over a period of 10 years, with an average buildout rate of about 1,100 MW per year. Like the VCIP, projects under the Reduced Project Size Alternative would also have an operations period of approximately 35 years.

As discussed in Section 6.3.2., the Reduced Project Size Alternative would result in lower levels of impact than VCIP implementation 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 agricultural resources, biological resources, cultural and tribal cultural resources, geology, soils and paleontology, hydrology and water quality, noise, public services, wastewater disposal, solid waste disposal, although all these impacts would be less than significant or fully mitigable with VCIP implementation. Compared to implementation of the proposed VCIP, selection of the Reduced Project Size Alternative would result in greater levels of impact in the categories of air quality, energy, and GHG emissions, and similar levels of impact to VCIP solar development in terms of hazards and hazardous materials, hydrology and water quality, noise, public services, wastewater disposal, and solid waste disposal, although all these impacts would be less than significant land use and planning, mineral resources, water supply, and wildfire. In addition, while VCIP implementation would result in significant and unavoidable impacts relative to aesthetics and agricultural resources, the Reduced Project Size Alternative would also result in significant and unavoidable impacts relative to aesthetics and agricultural resources. As such, their effects upon aesthetics and agricultural resources would be substantially similar. Overall, the proposed VCIP and the Reduced Project Size Alternative would result in substantially similar effects across most impact categories. However, in terms of their respective merits, the proposed VCIP would result in substantially greater environmentally beneficial effects related to renewable energy generation and storage (i.e., 21,000 MW generation capacity versus 11,000 MW generation capacity), which would offset substantially more GHG emissions associated with the consumption of fossil fuel to produce electricity. Thus, while the proposed VCIP and the Reduced Project Size Alternative are generally similar from an impacts perspective, the VCIP’s substantially greater environmental benefits make the proposed VCIP environmentally superior. Relatedly, the Reduced Project Size Alternative would not go as far as the VCIP in fulfilling the basic project objectives of the VCIP, as restated at the beginning of this chapter, particularly the objectives related to water supply facilitating SGMA implementation, and helping to meet the state’s renewable energy and GHG reduction targets through repurposing farmland affected by water supply constraints for the generation of fossil-free sources of electricity.

ES.5.3.4. Comparison of the VCIP and its Alternatives

The foregoing analysis of comparative impacts between the VCIP and the project alternatives is summarized in Table ES-1 (see below).

The No Project Alternative would result in somewhat lower impacts in several categories, and similar levels of impact in other categories relative to implementation of the proposed VCIP. However, if selected instead of the

VCIP, the No Project Alternative would result in greater impacts in several categories, such as energy, GHG emissions, and water supply because the VCIP would generate environmental benefits in these impact areas. Moreover, the No Project Alternative would not reduce the significant and unavoidable impacts relative to aesthetics and agricultural resources of VCIP implementation to less than significant. The No Project Alternative would also fail to satisfy many of the project objectives, unlike the proposed VCIP which would satisfy every project objective. Therefore, the No Project Alternative would not represent an environmentally superior alternative to the implementation of the proposed VCIP. Moreover, the No Project Alternative would not go as far as the VCIP in fulfilling the basic project objectives, particularly the objectives of achieving sustainable groundwater supplies in the District and helping to meet the state's renewable energy and GHG reduction targets through repurposing of less productive farmland for the generation of fossil-free sources of electricity.

TABLE ES-1**SUMMARY COMPARISON OF VCIP IMPLEMENTATION WITH PROJECT ALTERNATIVES**

Impact Category	Level of Impacts		
	VCIP	Impacts of Alternatives Compared to VCIP	
		No Project Alternative	Reduced Project Size Alternative
Aesthetics	Significant & Unavoidable (SU)	Lower/SU*	Lower/SU*
Air Quality	Less than Significant	Greater	Greater
Agriculture & Forestry Resources	Significant & Unavoidable (SU)	Lower/SU*	Lower/SU*
Biological Resources	Less than Significant	Lower	Lower
Cultural & Tribal Cultural Resources	Less than Significant	Lower	Lower
Energy	Less than Significant	Greater	Greater
Geology, Soils, & Paleontology	Less than Significant	Lower	Lower
Greenhouse Gas Emissions	Less than Significant	Greater	Greater
Hazards & Hazardous Materials	Less than Significant	Similar	Similar
Hydrology & Water Quality	Less than Significant	Lower	Similar
Land Use & Planning	No Impact	Similar	Similar
Mineral Resources	Less than Significant	Similar	Similar
Noise	Less than Significant	Lower	Lower
Public Services	Less than Significant	Lower	Lower
Transportation	Less than Significant	Lower	Lower
Utilities & Service Systems	Less than Significant	Mixed	Mixed
Wildfire	Less than Significant	Similar	Similar
Environmentally Superior Alternative?	Yes	No	No

* The impact under the alternatives would remain Significant and Unavoidable.

The Reduced Project Size Alternative would result in somewhat lower levels of impact under several categories, and similar levels of impact in other categories relative to implementation of the proposed VCIP. However, as provided above, in most of these categories, the impacts associated with implementation of the proposed VCIP would already be less than significant. Additionally, selecting the Reduced Project Size Alternative instead of the VCIP would diminish key environmental benefits provided by the VCIP regarding energy, GHG emissions, and water supply. Moreover, the Reduced Project Size Alternative would not eliminate the significant and unavoidable relative to aesthetics and agricultural resources of VCIP implementation to less than significant. The Reduced Project Size Alternative would also fail to satisfy many of the project objectives, unlike the proposed VCIP which would satisfy every project objective. On balance, the Reduced Project Size Alternative would not be the environmentally superior alternative because, while it would result in generally lower levels of impact in most categories compared to implementation of the proposed VCIP, it would not provide full environmental benefits from implementation of the VCIP as proposed. In particular, the Reduced Project Size Alternative would not go as far as the proposed VCIP in meeting the objectives related to water supply, facilitating SGMA implementation, and helping to meet the state's renewable energy and GHG reduction targets through repurposing of farmland affected by water supply constraints for the generation of fossil-free sources of electricity.

ES.5.3.5. Alternatives to the VCIP Considered but not Included in Detailed Alternatives Analysis

While 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).)

Alternatives may be eliminated from detailed consideration in an EIR if they fail to meet most of the project objectives, are infeasible, or do not avoid or substantially reduce any significant environmental effects (CEQA Guidelines Section 15126.6(c)). Alternatives that are remote or speculative, or the effects of which cannot be reasonably predicted, also do not need to be considered (CEQA Guidelines, section 15126.6(a), (c), (f)(1)).

The following potential alternatives were eliminated from further consideration in the EIR because they failed to meet most of the District's project objectives, were infeasible, and/or did not avoid or substantially reduce any significant environmental effects:

- **Reduced Project Size Alternative Which Includes Only Privately-Owned DFA Lands:** This alternative represented a mirror image to the Reduced Project Size Alternative which included only District-owned DFA lands but was not feasible due to the dispersed nature of the privately-owned DFA lands, and would result in greater impacts related to agricultural resources.
- **Alternative Project Location for the VCIP:** This alternative considered the southeastern desert area of California, but that entire area is the subject of the adopted Desert Renewable Energy Conservation Plan (DRECP), and no other suitably sized contiguous lands are available in California.
- **Alternative Project Location for VCIP Collection Substation No. 5:** The objective of this alternative was to identify an alternative for the substation site which did not involve the permanent conversion of prime farmland, but no feasible alternative sites were identified.

- **Alternative Solar Technologies:** The alternative technology considered was concentrated solar which was determined to not be feasible for several reasons.
- **Green Hydrogen:** This alternative was found to be infeasible for several reasons.
- **Other Forms of Renewable Energy:** This analysis considered wind generation, small hydroelectric plants, and cogeneration, all of which were determined to be infeasible in the Plan Area.
- **Distributed Generation:** This alternative was found to not meet the basic project objectives.
- **Demand Management/Conservation:** This alternative was not considered feasible and did not meet the basic project objectives.

ES.5.4. SUMMARY OF IMPACTS AND MITIGATION MEASURES

Table ES-2 summarizes the environmental impacts associated with implementation of the proposed VCIP, and the recommended mitigation measures, that, if adopted, would avoid or substantially reduce potential significant impacts of the Project, as discussed in detail in Chapter 4. *Environmental Impact Analysis*.

TABLE ES-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

POTENTIAL IMPACTS	MITIGATION MEASURES (MMs)
4.1. AESTHETICS	
AES-1. Substantial Adverse Effect on a Scenic Vista	
<u>VCIP Energy Resource and Infrastructure Plans.</u> The VCIP Plan Area is not part of a recognized scenic vista, nor are scenic vistas available from the Plan Area; therefore, VCIP implementation would not have a substantial adverse effect on a scenic vista. <i>(Less-than-Significant Impact)</i>	No mitigation is required.
AES-2. Substantially Damage Scenic Resources	
<u>VCIP Energy Resource and Infrastructure Plans.</u> Implementation of the VCIP Energy Resource and Infrastructure Plans would not substantially damage scenic resources. <i>(Less-than-Significant Impact)</i>	No mitigation is required.
AES-3. Substantially Degrade Existing Visual Character and Quality and Compliance with Applicable Zoning Regulations	
<u>VCIP Energy Resource and Infrastructure Plans.</u> Implementation of the VCIP Energy Resource and Infrastructure Plans would result in substantial changes to the visual character of the Plan Area. Whether these changes would substantially degrade the existing visual character or quality of the site and its surroundings depends on the individual circumstances of each VCIP project, with the level of impact ranging from no impact to significant. With respect to VCIP implementation adjacent to urbanized areas, the VCIP would not conflict with applicable zoning regulations governing scenic quality. <i>(Plan Level – Significant Impact;</i> <i>Project Level Impact – To be determined for each project)</i>	<p>MM AES-1: Visual Mitigation</p> <p>To avoid or substantially reduce potential visual impacts from VCIP implementation, the following mitigation measures are identified for implementation at the project stage, as applicable:</p> <ol style="list-style-type: none"> 1) For VCIP solar and energy storage projects located adjacent to public roadways: On the solar/energy storage project site, provide a 50-foot setback from the road right-of-way to the nearest project structure, not including fencing or internal driveways; 2) For residences with planned solar/energy storage projects contiguous to any residential property line: On the solar/energy storage project site, provide a 50-foot setback from the contiguous residential property line(s) to the nearest project structure, not including fencing or internal driveways; 3) At each VCIP energy resource and infrastructure project site, the following project elements shall be located as far as practicable from the nearest residence, and shall be located no nearer than 400 feet from the nearest residential property boundary: O&M yard and buildings; project substations; battery energy storage facilities, and construction staging and laydown areas. <p>Significance After Mitigation: Plan Level – Significant Unavoidable Impact. Project Level – To be determined for each project.</p>

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	
<p>VCIP Energy Resource and Infrastructure Plans. The VCIP energy and infrastructure projects would introduce new sources of light and low-level glare to the Plan Area; however, the VCIP facilities would be specifically designed and constructed to minimize light and glare and would not adversely affect day or nighttime views in the area. (<i>Less-than-Significant Impact</i>)</p>	<p>No mitigation is required.</p>
4.2. AGRICULTURAL RESOURCES	
AG-1. Agricultural Land Conversion	
<p>VCIP Energy Resource Plan. The solar and energy storage facilities developed on “Farmland” would not alter the physical and chemical properties of the affected agricultural soils, and upon decommissioning the soils would be restored to a condition suitable for agricultural uses. The temporary, albeit long-term, modification of the land for renewable energy facilities would not affect the long-term suitability of the soils for agricultural use. As discussed in the analysis below, implementation of the VCIP Energy Resources Plan would not result in the permanent conversion of “Farmland” and proposed renewable energy facilities thus would not be expected to result in a significant impact related to agricultural resources at the project level. Nevertheless, in light of the scope and duration of the long-term temporary modification of the Plan Area for renewable energy facilities and the need for project-level details (e.g., whether the proposed project includes sheep grazing or other ongoing agricultural activities) and site-specific information to assess the appropriateness and feasibility of mitigation measures (e.g., Fresno County General Plan Policy LU-A.23), this impact is conservatively considered <i>significant and unavoidable</i> at the plan level. (<i>Significant Unavoidable Impact</i>)</p>	<p>MM AG-1: Protection of Long-Term Agricultural Land Capability</p> <p>To avoid or substantially reduce any potential temporary and permanent impacts to agricultural land capability of Farmland due to the long-term temporary repurposing of Farmland for solar energy generation and battery energy storage under the VCIP, the following mitigation measures shall be implemented at the project stage:</p> <ol style="list-style-type: none"> 1) Leases/Easements Required on Repurposed Farmland and Limitations on Duration: To ensure that the solar generation and energy storage use of the repurposed farmland will be limited in duration, the development rights for the repurposed lands shall be in the form of long-term leases or easements, and not fee simple. The lease or easement contracts shall specify terms of no longer than 35 years, at which time the lease or easement shall expire. The leases or easements may be extended by up to five years but only upon approval of a new land use permit by the approving agency. 2) Vegetation and Soil Management Plan. To ensure that lands temporarily repurposed for solar generation and/or energy storage uses are managed to preserve their long-term agricultural capability, each project proponent shall prepare a Vegetation and Soil Management Plan (VSMP) which shall be implemented for the duration of the lease/easement period through completion of decommissioning. The Plan shall include details on the following: <p>[Continued on next page.]</p>

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

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
4.2. AGRICULTURAL RESOURCES (CONT'D)	
AG-1. Agricultural Land Conversion (Cont'd)	
<u>VCIP Energy Resource Plan (Cont'd)</u>	<p>[Continued from preceding page.]</p> <p>1) soil testing and identification of soil amendments as needed; 2) the seed mixture to be used on-site, including native and desirable non-native, low-stature species; 3) pre-project soil preparation and seed application methods; 4) vegetation and soil condition goals, success criteria, monitoring schedule, and reporting requirements; 5) vegetation and soil maintenance procedures, including adaptive management guidelines and reseeding requirements; 6) timing of implementation. The VSMP shall cover the entire solar/BESS facility site including all areas of the property outside the fence lines of the solar arrays, BESS facilities, substations, and O&M facilities. Ongoing implementation of the VSMP shall be coordinated with the ongoing implementation of the Pest Management and Weed Abatement Plan (PMWAP).</p> <p>3) <u>Pest Management and Weed Abatement Plan</u>. To prevent infestations of invasive weed and vertebrate pest species on lands repurposed for solar generation and energy storage uses, each project proponent shall prepare a Pest Management and Weed Abatement Plan (PMWAP) which shall be implemented for the duration of the lease/easement period through completion of decommissioning and site restoration. The PMWAP shall include details on the following: 1) pre-project inventory, mapping, and removal of invasive weed species prior to construction; 2) identification of target weed and pest species to be controlled during facility construction, operation, and decommissioning; 3) best management practices (BMPs) for prevention, monitoring, and adaptive management of weed and pest species; 4) treatment methods including guidelines for use of pesticides and herbicides; 5) reporting requirements. The prescribed weed control methods may include the use of long-term pre-emergent broadleaf herbicides selected for their specificity to target weed species with minimal anticipated impact on the establishment or health of annual grasses planted in accordance with the VSMP. Weed control methods generally shall not include the use of non-selective soil sterilants or other herbicides that result in long-term inactivity or prevent vegetation, and any application of such soil sterilants shall be limited to substations, BESS facilities, internal roads and driveways, and other limited areas required to be maintained as defensible spaces, to be determined at the project level on a case-by-case basis. The PMWAP shall cover the entire solar/BESS facility site including all areas of the property outside the fence lines of the solar arrays, BESS facilities, substations, and O&M facilities. Ongoing implementation of the PMWAP shall be coordinated with the ongoing implementation of the VSMP.</p> <p>[Continued on next page.]</p>

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

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
4.2. AGRICULTURAL RESOURCES (CONT'D)	
AG-1. Agricultural Land Conversion (Cont'd)	
<u>VCIP Energy Resource Plan</u> (Cont'd)	<p>[Continued from preceding page.]</p> <p>4) <u>Decommissioning and Soil Reclamation Plan.</u> To ensure that lands repurposed for solar generation and battery storage use are restored to a condition suitable for the resumption of agricultural uses, each project proponent shall prepare a Decommissioning and Soil Reclamation Plan (DSRP) which shall be implemented within six months of cessation of operations at the facilities. The DSRP shall include details on the following: 1) description and photographic inventory of the project site and soils prior to the start of initial site disturbing activities; 2) removal of all above-ground and below-ground project fixtures, equipment, foundations, and gravel driveways; 3) grading and tilling to restore surface soils and subgrade soils to a density and depth consistent with their pre-project condition; 4) revegetation of newly exposed soils in accordance with the VSMP. The implementation of the DSRP shall be ensured through the posting of adequate financial assurance by the project proponent prior to issuance of the first building permit for the project, in accordance with the Financial Assurance Requirements below. The DSRP shall include an appendix containing the Engineer's Cost Estimate that specifies the amount of the financial assurance to be provided.</p> <p>5) <u>Financial Assurance Requirements.</u> To ensure implementation of the Decommissioning and Soil Reclamation Plan upon cessation of facility operations, each project proponent shall post an adequate form of financial assurance to the satisfaction of the District or other lead agency with permitting authority over the project, as prescribed here: 1) submittal of a cash bond, Certificate of Deposit, letter of credit, or other financial assurance acceptable to the approving agency; 2) the amount of the financial assurance shall be as specified in an Engineer's Cost Estimate for decommissioning in present value, as approved by the approving agency; 3) the amount of the financial assurance shall be reviewed at least every 10 years and within six (6) months of decommissioning and adjusted to reflect the then current cost estimate for decommissioning; 4) the amount of the financial assurance shall be supplemented every 10 years based on the updated Engineer's Cost Estimate, with the final supplement to be provided at the cessation of facility operations, such that the total amount shall be sufficient to cover the full cost of decommissioning and reclamation. The sufficiency of the cost estimate and the financial assurance for purposes of achieving full decommissioning and site reclamation in accordance with the Reclamation Plan shall be determined by the District or other lead agency prior to execution of the deconstruction contract for decommissioning.</p> <p>[Continued on next page.]</p>

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

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
4.2. AGRICULTURAL RESOURCES (CONT'D)	
AG-1. Agricultural Land Conversion (Cont'd)	
<u>VCIP Energy Resource Plan (Cont'd)</u>	<p>6) <u>Right to Farm Ordinance</u>. The applicant must acknowledge Fresno County's Right to Farm Ordinance and shall be required to record a Right to Farm Notice prior to issuance of any permits. This shall be included as a recommended Condition of Approval of the land use entitlement.</p> <p>Significance after Mitigation: Significant and Unavoidable Plan-Level Impact. No mitigation is required.</p>
<u>VCIP Tie-Gen and Connector Transmission Lines</u> . The VCIP gen-tie lines and connector transmission lines would result in the permanent loss of "Farmland" on a series of very small parcels occupied by the tower footings, which would be dispersed over the length of the corridors and would involve removal of a total of approximately 47 acres of "Farmland" throughout the total 339-mile length of the corridors. As discussed in the analysis below, the loss of this small aggregate acreage of dispersed Farmland is considered insubstantial within the overall farming units and would not represent a significant impact to agricultural resources. (Less-than-Significant Impact)	No mitigation is required.
<u>VCIP Collection Substation No. 5</u> . VCIP Substations No. 5 would involve the permanent conversion of approximately 60 acres of contiguous Farmland, which would represent a significant impact related to agricultural resources. (Significant Unavoidable Impact)	<p>MM AG-2: Mitigation for Farmland Conversion</p> <p>Unless exempted by Fresno County pursuant to Fresno County General Plan Policy LU-A.23, to avoid or substantially reduce potential impacts due to permanent conversion of up to 60 acres of Farmland at the proposed location of VCIP Substation No. 5, one or a combination of the following mitigation measures shall be considered for implementation at the project stage to achieve a 1:1 ratio for lands permanently lost to nonagricultural uses as specified below:</p> <ol style="list-style-type: none"> 1) Acquisition of conservation easements at a 1:1 ratio for lands permanently lost to nonagricultural uses. 2) Acquisition of fee title of agricultural mitigation land that may be held by a third party or the County, at a 1:1 ratio for lands permanently lost to nonagricultural uses. 3) Payment of in lieu fees paid to the County that may be used to acquire future mitigation property, equivalent to a 1:1 ratio for lands permanently lost to nonagricultural uses. 4) Payment of fees paid to mitigation banks for mitigation credits equivalent to a 1:1 ratio for lands permanently lost to nonagricultural uses. 5) Other forms of acceptable mitigation with provides the equivalent of a 1:1 ratio for lands permanently lost to nonagricultural uses. <p>Significance After Mitigation: Significant Unavoidable Impact.</p>

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

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.2. AGRICULTURAL RESOURCES (CONT'D)	
AG-2. Conflict with Agricultural Zoning and Williamson Act	
<p><u>VCIP Energy Resource Plan.</u></p> <p><u>Agricultural Zoning:</u> The VCIP solar and energy storage facility land uses would be expected to be consistent with the existing Fresno County agricultural zoning for the Plan Area, under which utility-scale solar development that complies with the County's Solar Facility Guidelines is a conditionally permitted use. Fresno County implements the Williamson Act through contracts with private landowners and assesses compatibility of proposed land uses with those contracts through identified principles and requirements. In light Fresno County's role and responsibilities in connection with implementation of the Williamson Act based on site-specific information at the project level, this impact is conservatively considered <i>significant and unavoidable</i> at the plan level. (Significant Unavoidable Impact)</p> <p><u>Williamson Act:</u> Development of solar and energy storage facilities on lands subject to Williamson Act contracts would be expected to be consistent with the Williamson Act because they are considered electrical facilities and, as such, are deemed compatible uses within any agricultural preserve. These uses under the VCIP would also be consistent with Fresno County's Williamson Act Guidelines and the Williamson Act's principles of compatibility set forth in Government Code section 51238.1(a). Construction of solar generation and energy storage facilities on lands under Williamson Act contracts would not be expected to conflict with any Williamson Act contract. Fresno County implements the Williamson Act through contracts with private landowners and assesses compatibility of proposed land uses with those contracts through identified principles and requirements. In light Fresno County's role and responsibilities in connection with implementation of the Williamson Act based on site-specific information at the project level, this impact is conservatively considered <i>significant and unavoidable</i> at the plan level. (Significant Unavoidable Impact).</p>	Implement MMs AG-1 and AG-2, as applicable.
<p><u>VCIP Infrastructure Plan.</u></p> <p><u>Agricultural Zoning:</u> Under the Fresno County Zoning Ordinance, electrical substations, gen-tie lines, and transmission lines are allowable uses in the Agricultural zone subject to an Unclassified Conditional Use Permit. Therefore, implementation of the VCIP Infrastructure Plan would not be expected to conflict with agricultural zoning. (No Impact)</p> <p>[Continued on next page.]</p>	Implement MMs AG-1 and AG-2, as applicable.

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

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
4.2. AGRICULTURAL RESOURCES (CONT'D)	
AG-2. Conflict with Agricultural Zoning and Williamson Act (Cont'd)	
<p>[Continued from preceding page.]</p> <p><u>Williamson Act</u>: Under the Williamson Act, electrical facilities are deemed compatible uses within any agricultural preserve. These uses under the VCIP would also be consistent with Fresno County's Williamson Act Guidelines and the Williamson Act's principles of compatibility set forth in Government Code section 51238.1(a). Construction of VCIP substations, gen-tie lines, and transmission lines would not be expected to conflict with any Williamson Act contract. Fresno County implements the Williamson Act through contracts with private landowners and assesses compatibility of proposed land uses with those contracts through identified principles and requirements. In light Fresno County's role and responsibilities in connection with implementation of the Williamson Act based on site-specific information at the project level, this impact is conservatively considered <i>significant and unavoidable</i> at the plan level. (Significant Unavoidable impact)</p>	Implement MMs AG-1 and AG-2, as applicable.
AG-3. Land Use Conflicts Resulting in Potential Conversion of Farmland to Non-	Agricultural Uses
<p><u>VCIP Energy Resource Plan</u>. The potential land use conflicts resulting from constructing the VCIP solar and energy storage facilities adjacent to ongoing agricultural operations on Farmlands would not directly or indirectly result in the conversion of those adjacent Farmlands to non-agricultural uses. (Less-than-Significant Impact)</p>	No mitigation is required.
<p><u>VCIP Infrastructure Plan</u>. Construction of the VCIP collector substations, gen-tie lines, and connector transmission lines would not directly or indirectly result in the conversion of adjacent Farmlands to non-agricultural uses. (Less-than-Significant Impact)</p>	No mitigation is required.
AG-4. Loss of Forest Land, Conflicts with Zoning for Forest Land or Timberland,	or Potential Conversion of Forest Land to Non-Forest Use
<p><u>VCIP Energy Resource and Infrastructure Plans</u>. Implementation of the VCIP Energy Resources and Infrastructure Plans would not directly result in the loss of forest land, would not conflict with zoning for forest land or timberland, and would not indirectly result in the conversion of forest lands to non-forest uses. (No Impact)</p>	No mitigation is required.

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

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
4.3. AIR QUALITY	
AQ-1. Conflict with Air Quality Plans	
<u>VCIP Energy Resource and Infrastructure Plans.</u> Implementation of the VCIP Energy Resource and Infrastructure Plans would not conflict with or obstruct implementation of an applicable air quality plan. <i>(Less-than-Significant Impact)</i>	No mitigation is required.
AQ-2. Cumulatively Considerable Net Increase in Any Criteria Pollutant	
<u>VCIP Energy Resource and Infrastructure Plans.</u> Implementation of the VCIP Energy Resource and Infrastructure Plans would increase emissions of criteria pollutants; however, any increases would be reduced to below the applicable San Joaquin Valley Air Pollution Control District (SJVAPCD) criteria pollutant offset thresholds by mitigation measures and would not be cumulatively considerable. <i>(Less-than-Significant Impact with Mitigation)</i>	<u>MM AQ-1: Construction and Decommissioning Period Emissions Controls</u> To reduce potential emissions of criteria pollutants and their precursors for which the Plan Area is non-attainment during construction and decommissioning of individual VCIP projects, apply on- and off-site emissions reduction measures as required by the SJVAPCD. Significance after Mitigation: Less-than-Significant Impact.
AQ-3. Exposure of Sensitive Receptors to Substantial Pollutant Concentrations	
<u>VCIP Energy Resource and Infrastructure Plans.</u> Implementation of the VCIP Energy Resource and Infrastructure Plans would not expose sensitive receptors to substantial pollutant concentrations. <i>(Less-than-Significant Impact)</i>	No mitigation is required.
AQ-4. Other Emissions (such as Odors) Adversely Affecting a Substantial Number of People	
<u>VCIP Energy Resource and Infrastructure Plans.</u> Implementation of the VCIP Energy Resource and Infrastructure Plans would not result in other emissions (such as those leading to odors) that would adversely affect a substantial number of people. <i>(Less-than-Significant Impact)</i>	No mitigation is required.

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

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
4.4. BIOLOGICAL RESOURCES	
BIO-1. Impacts to Special Status Plants	
<p><u>VCIP Energy Resource and Infrastructure Plans.</u> Implementation of the VCIP Energy Resource and Infrastructure Plans could have a potentially substantial adverse impact on 11 special-status plant species that may be present within the Plan Area. <i>(Less-than-Significant Impact with Mitigation)</i></p>	<p><u>MM BIO-1: Protection of Special Status Plant Species</u> To avoid potentially significant impacts to special-status plant species due to VCIP implementation, the following mitigation measures are applicable at the project-specific level:</p> <ul style="list-style-type: none"> a) <u>Initial Biological Site Survey and Land Cover Mapping:</u> Prior to site-specific project approval and any ground disturbance, a qualified biologist shall be retained to conduct an initial biological site survey and prepare land cover maps that delineate the habitat types present on the project site. Based on the habitat types found to be present on the project site, the biologist shall identify the specific species of protected plants, if any, that shall be subject to pre-construction surveys to be conducted prior to ground-disturbing activities for the project. b) <u>Pre-construction Surveys:</u> If potentially suitable habitats are detected on an individual project site during initial site surveys and land cover mapping, and prior to the initial ground disturbance for the project, a qualified biologist shall conduct a protocol-level rare plant survey following CDFW's 2018 <i>Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities</i> or the most recent CDFW guidelines. The survey shall target all suitable habitats of the project site that would be subject to project-related ground disturbance, and shall be conducted during appropriate times of year, when local populations of the target species are in bloom and readily identifiable. If suitable habitats are found to be absent, or if special-status plant species are found to be absent from the site, no further action is required. c) <u>Avoidance:</u> If individuals or populations of the target plant species are identified in planned disturbance areas, project design shall be modified, to the extent feasible, to avoid the plants. A qualified biologist shall identify an appropriate buffer around the plants, and no construction or other project-related activities shall be permitted within the area demarcated for the special-status plant species. <i>[Continued on next page.]</i>

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

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
4.4. BIOLOGICAL RESOURCES (CONT'D)	
BIO-1. Impacts to Special Status Plants (Cont'd)	
<u>VCIP Energy Resource and Infrastructure Plans.</u> (Cont'd)	<p>[Continued from preceding page.]</p> <p>d) <u>Relocation/Salvage</u>: If it is not feasible to avoid individuals or populations of rare plant species observed on a project site, the affected populations shall be salvaged in accordance with a plan prepared by a qualified biologist and approved by CDFW that shall include contingencies for an unsuccessful salvage effort. Salvage methods may include seed collection and dispersal, and/or topsoil collection and redispersal, as appropriate to the species. The replacement planting and/or relocation area(s) shall be located on portions of the project site that support suitable habitat and soils for the affected species and that will not be subject to project-related ground disturbance. A replacement planting area shall occupy the same area (no net-loss of area) of the new population. A relocation area shall occupy a larger area than the original area (net-gain of area). Replacement planting and relocation areas shall be monitored for a period of five years to ensure successful establishment. Although annual plants' success in any single year depends on climatic conditions year-to-year, on average, replacement and/or relocation shall be implemented to achieve no net loss through replacement plantings that occupy the same area (no net-loss of area) of the new population, and relocation areas that occupy a larger area than the original area (net-gain of area). In addition, if federally protected rare plants are present on the site, the project proponent may be required to consult with the USFWS if there is a federal nexus for the individual project.</p> <p>Significance after Mitigation: Less-than-Significant Impact.</p>
BIO-2. Impacts to Special Status Animals	
<u>VCIP Energy Resource and Infrastructure Plans.</u> Implementation of the VCIP Energy Resource and Infrastructure Plans could have a potentially substantial adverse impact on special-status animal species that may utilize the Plan Area as breeding and/or foraging habitat. (Less-than-Significant Impact with Mitigation)	<p>MM BIO-2: Protection of Special-Status Animal Species</p> <p>To avoid potentially significant impacts to special-status animal species due to VCIP implementation, the following mitigation measures are applicable at the project-specific level:</p> <p>a) <u>Initial Biological Site Surveys and Land Cover Mapping</u>: Prior to site-specific project approval and any ground disturbance, a qualified biologist shall be retained to conduct an initial biological site survey and prepare land cover maps that delineate the habitat types present on the project site. Based on the habitat types found to be present on the project site, the biologist shall identify the specific species of protected animals, if any, that shall be subject to pre-construction surveys to be conducted prior to ground-disturbing activities for the project, as specified for each species in Mitigation Measures BIO-3 through BIO-13. [Continued on next page.]</p>

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

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
4.4. BIOLOGICAL RESOURCES (CONT'D)	
BIO-2. Impacts to Special Status Animals (Cont'd)	
<u>VCIP Energy Resource and Infrastructure Plans. (Cont'd)</u>	<p>[Continued from preceding page.]</p> <p>b) <u>Minimization Measures:</u> If individuals of any special-status animal species that are considered to occur rarely to occasionally within the Plan Area are found to be present on a project site prior to or during project construction, the animal(s) shall be allowed to move off-site independently. Alternatively, a qualified biologist may assist the individual(s) with moving off the project site.</p> <p>Significance after Mitigation: Less-than-Significant Impact.</p>
BIO-3. Disturbance to Active Raptor and Migratory Bird Nests	
<p><u>VCIP Energy Resource and Infrastructure Plans.</u> Implementation of the VCIP Energy Resource and Infrastructure Plans could result in disturbance to active nests of raptors and migratory birds. (Less-than-Significant Impact with Mitigation)</p>	<p>MM BIO-3: Protection of Raptor and Migratory Bird Nests</p> <p>To minimize disturbance to any active raptor and other bird nests due to VCIP implementation, the following mitigation measures are applicable at the project-specific level:</p> <ol style="list-style-type: none"> <u>Pre-Construction Surveys for Active Nests.</u> 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 10 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. <u>Exclusion Zones for Active Nests.</u> If any active nests are discovered in or near the planned construction zones on or adjacent to the project site, the qualified biologist shall monitor identified nests to establish a behavioral baseline. Once work commences, the qualified biologist should monitor all nests to detect any behavioral changes because of the project. If behavioral changes are observed, stop the work causing that change and consult with the California Department of Fish and Wildlife for additional avoidance and minimization measures. <u>Establish Exclusion Zones.</u> Alternatively, should any active nests be discovered in or near planned construction zones, the qualified biologist shall establish an appropriate construction-free buffer (exclusion zone) around the nest depending on the species of bird, activity level of the area, and terrain. This exclusion zone shall be identified on the ground with flagging or fencing and shall be maintained until the qualified biologist has determined that the young have fledged. [Cont'd]

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

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
4.4. BIOLOGICAL RESOURCES (CONT'D)	
BIO-3. Disturbance to Active Raptor and Migratory Bird Nests (Cont'd)	
<u>VCIP Energy Resource and Infrastructure Plans.</u> (Cont'd)	<p>[Continued from preceding page.]</p> <p>d. <u>Tailgate Training for Workers.</u> All construction and operations workers on the project site shall be trained by a qualified biologist. The tailgate (on-site) 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 to avoid birds falling into the pipes and getting stuck.</p> <p>e. <u>Capping of Hollow Poles and Posts.</u> Should any vertical tubes, such as solar mount poles, chain link fencing poles, or any other hollow tubes or poles be utilized on the project site, the poles shall be capped immediately after installation to prevent entrapment of birds.</p> <p>Significance after Mitigation: Less-than-Significant Impact.</p>
BIO-4. Impacts to Long Horn Fairy Shrimp	
<p><u>VCIP Energy Resource and Infrastructure Plans.</u> Implementation of the VCIP Energy Resource and Infrastructure Plans could result in potentially substantial adverse impacts to longhorn fairy shrimp, a federally listed endangered species. (Less-than-Significant Impact with Mitigation)</p>	<p>MM BIO-4: Protection of Longhorn Fairy Shrimp</p> <p>To minimize potentially significant impacts to longhorn fairy shrimp due to VCIP implementation, the following mitigation measures are applicable at the project-specific level:</p> <p>a) <u>Habitat Survey.</u> Conduct initial biological survey and habitat mapping for the project as set forth in Mitigation Measure BIO-1a. If the initial biological survey on the project site determines that vernal pools or seasonal wetlands are present on the site, the project proponent may either assume presence of the longhorn fairy shrimp, or conduct protocol surveys as specified in Mitigation Measure BIO-4b. Protocol surveys for longhorn fairy shrimp are not required if the initial biological survey determines suitable habitats are absent from the project site.</p> <p>b) <u>Species-Specific Surveys.</u> If suitable habitats are present on the project site protocol surveys during normal rainfall years, consisting of either (1) surveys in two wet seasons, or (2) one wet season and one dry season survey are required to demonstrate the species is absent from an individual project site. Wet-season sampling entails the sampling of all pools at 10-day intervals after the pools have filled with water.</p> <p>[Continued on next page.]</p>

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

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
4.4. BIOLOGICAL RESOURCES (CONT'D)	
BIO-4. Impacts to Long Horn Fairy Shrimp (Cont'd)	
<u>VCIP Energy Resource and Infrastructure Plans. (Cont'd)</u>	<p><i>[Continued from preceding page.]</i></p> <p>Ten to 12 sampling visits are generally required during a winter of average rainfall, depending on rainfall patterns. The USFWS can reject negative findings from any wet season survey if conditions are below normal in rainfall or if the rainfall pattern was highly skewed (e.g., all falling within a very short period). Dry season surveying involves collecting soil from the bottoms of on-site vernal pools, examining the soil for potential longhorn fairy shrimp eggs, and, if any potential longhorn fairy shrimp eggs are identified, rearing shrimp from these eggs to determine if they are longhorn fairy shrimp. The USFWS will consider listed vernal pool species to be absent from a site if two wet season surveys are negative, or if a dry season survey combined with a subsequent wet season survey in a normal year are negative. If protocol surveys do not detect presence of longhorn fairy shrimp on the project site, no mitigation is required.</p> <p>If longhorn fairy shrimp are observed early in the survey period and the USFWS agrees that continuing the surveys after shrimp have been found is unnecessary, then further surveys would not be required, and all vernal pool habitat on the site shall be considered inhabited by this species.</p> <p>Alternatively, the entire survey effort could be foregone and the presence of this species on the site may be presumed with the understanding that doing so would require mitigation measures for the take of this species.</p> <p>c) <u>Obtain "Take" Authorization.</u> Direct and possibly indirect disturbance to vernal pools of the site would be considered a "take" of this federally listed species if this species is detected or if presence is assumed by the project proponent. The "take" of this species would require the project proponent obtain take authorization from the USFWS under Section 7 of the federal Endangered Species Act (ESA) (applicable if there is federal nexus, such as the requirement for Section 404 permit under the federal Clean Water Act for fill of a jurisdictional wetland) or Section 10 (if no federal nexus). If the project has a federal nexus, then a Section 7 consultation process must be initiated by the USACE (the applicable federal permitting agency) prior to the issuance of the Section 404 permit. Once the consultation process has formally begun, the USFWS has 135 days to issue either a Biological Opinion (BO), which would authorize the take of a listed species incidental to the implementation of a lawful project, or a jeopardy opinion (which is rare) which would determine that the "take" of the listed species would jeopardize the continued existence of the species. If there is no federal nexus, the project proponent would need to obtain take authorization under Section 10 of the ESA, which is a process administered by the USFWS Endangered Species Branch in Sacramento. <i>[Continued on next page.]</i></p>

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

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
4.4. BIOLOGICAL RESOURCES (CONT'D)	
BIO-4. Impacts to Long Horn Fairy Shrimp (Cont'd)	
<u>VCIP Energy Resource and Infrastructure Plans. (Cont'd)</u>	<p>[Continued from preceding page.]</p> <p>d) <u>Typical Mitigation Measures.</u> Take authorization would require avoidance and minimization measures, as well as compensatory mitigation measures which would reduce the magnitude of the “take” of this species. Current mitigation standards of the USFWS for this species consist of the following: 1) a 250-foot buffer around avoided pools in which fairy shrimp occur; 2) the preservation of existing fairy shrimp habitat at a 2:1 ratio; and 3) the creation of new shrimp habitat at a 1:1 ratio. The preservation requirement can be met by purchasing preservation credits from an agency approved mitigation bank and the creation requirement can be met by purchasing vernal pool creation credits from either the applicable in-lieu fee program or a USACE approved mitigation bank.</p> <p>Indirect impacts to preserved vernal pool habitat can generally be avoided if a development-free buffer of 250 feet is provided around preserved pools. A buffer of this size may not be sufficient if the planned development is within the watershed of the pool such that runoff drains from developed areas of the project site into the vernal pool or deprives the vernal pool of natural runoff water.</p> <p>Significance after Mitigation: Less-than-Significant Impact.</p>
BIO-5. Impacts to Crotch’s Bumble Bee	
<p><u>VCIP Energy Resource and Infrastructure Plans.</u> Implementation of the VCIP Energy Resource and Infrastructure Plans could result in potentially substantial adverse impacts to Crotch’s bumble bee, a candidate species for state listing as threatened or endangered. (Less-than-Significant Impact with Mitigation)</p>	<p>MM BIO-5: Protection of Crotch’s Bumble Bee</p> <p>To minimize impacts to the Crotch’s bumble bee due to VCIP implementation, the following mitigation measures are applicable at the project-specific level:</p> <p>a) <u>Habitat Assessment.</u> Conduct initial biological survey and habitat mapping for the project as set forth in Mitigation Measure BIO-1a. If the initial biological survey on the project site determines that there is no potential for Crotch’s bumble bee to occur on the site, no additional surveys are required. If there is potential for the species to occur on the site, conduct pre-construction surveys as specified in Mitigation Measure BIO-5b.</p> <p>[Continued on next page.]</p>

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

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
4.4. BIOLOGICAL RESOURCES (CONT'D)	
BIO-5. Impacts to Crotch's Bumble Bee (Cont'd)	
<u>VCIP Energy Resource and Infrastructure Plans. (Cont'd)</u>	<p>[Continued from preceding page.]</p> <p>b) <u>Preconstruction Surveys.</u> A qualified biologist shall conduct pre-construction surveys during the three stages of Crotch's bumble bee flight period with a methodology approved by CDFW, as provided in CDFW's 2023 <i>Survey Considerations for California Endangered Species Act (CESA) Candidate Bumble Bee Species</i> or its most recent guidance document. This survey shall be conducted during the season prior to the start of work (i.e., if work is scheduled to start in the late summer, surveys may be conducted that same year; if work is scheduled to start in winter or early spring, the surveys shall occur during the year before the year construction is scheduled). If Crotch's bumble bees are observed on the site, intensive surveys shall be required as specified in Mitigation Measure BIO-5c.</p> <p>c) <u>Intensive Surveys and Take Avoidance.</u> If Crotch's bumble bees are observed on the site, intensive surveys to locate underground nests shall be conducted. If an underground nest is located, individuals at the nest shall be photographed to confirm species. If the underground nest is confirmed to be occupied by Crotch's bumble bees, the nest shall be flagged and a 25-foot exclusion zone established around the nest. An avoidance plan shall be developed in consultation with CDFW prior to any project work and/or vegetation removal or other ground disturbance within the 25-foot exclusion zone.</p> <p>d) <u>Compensation.</u> If Crotch's bumble bee is found to be present on-site and if take avoidance is not feasible, then a mitigation plan that provides for on- or off-site compensation shall be prepared and implemented. The mitigation plan shall provide for a minimum of a 1:1 replacement ratio of suitable habitat, at an onsite or offsite location. The plan shall define measures to restore and/or enhance existing habitat, management strategies to maintain the conservation value of the habitat in perpetuity, and a funding source for the ongoing management of the mitigation site.</p> <p>If the Crotch's bumble bee is permanently listed as threatened or endangered prior to the time of project development, the project proponent will be required to obtain an Incidental Take Permit from CDFW under the California Endangered Species Act (CESA). If the California Fish and Game Commission decides to not list the Crotch's bumble bee under the CESA, then implementation of Mitigation Measures BIO-5b through BIO-5d would not be required.</p> <p>Significance after Mitigation: Less-than-Significant Impact.</p>

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

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
4.4. BIOLOGICAL RESOURCES (CONT'D)	
BIO-6. Impacts to Western Spadefoot Toad and North-	western Pond Turtle
<p>VCIP Energy Resource and Infrastructure Plans. Implementation of the VCIP Energy Resource and Infrastructure Plans could result in potentially substantial adverse impacts to western spadefoot toad and northwestern pond turtle. <i>(Less-than-Significant Impact with Mitigation)</i></p>	<p>MM BIO-6: Protection of the Western Spadefoot Toad and Northwestern Pond Turtle</p> <p>To reduce the likelihood of mortality to the western spadefoot and northwestern pond turtle due to VCIP implementation, the following mitigation measures are applicable at the project-specific level:</p> <p>a) <u>Habitat Assessment</u>. Conduct initial biological survey and habitat mapping for each project as set forth in Mitigation Measure BIO-1a. If the initial biological survey on the project site determines that there is no suitable breeding habitat for western spadefoot toad (i.e., vernal pools or ephemeral pools, including some ponded water which holds water for at least two weeks to one month), no species-specific surveys for the western spadefoot are required. If suitable breeding habitat for western spadefoot is present on the project site, then in addition to Mitigation Measure BIO-6c, the project proponent shall either implement Mitigation Measure BIO-6b (elective surveys) or BIO-6d (assumed presence).</p> <p>If suitable habitat for the northwestern pond turtle is present on the project site, then Mitigation Measure BIO-6c would be required to be implemented.</p> <p>b) <u>Elective Species-Specific Surveys</u>. Instead of assuming the presence of western spadefoot pursuant to Mitigation Measure BIO-6d, the project proponent may retain a qualified biologist to survey the project site for the presence of suitable habitat for western spadefoot during the appropriate times in March, April, and May in an at least average rain year when any western spadefoot would be above ground and observable. If western spadefoot toads are identified at or near wetland features, those features shall have exclusion zones established, as specified in MM BIO-6d, prior to ground disturbing activity associated with the project, as specified in Mitigation Measure BIO-6c.</p> <p>c) <u>Preconstruction Surveys</u>. During the course of the construction surveys for other species, a qualified biologist shall also determine the presence or absence of western spadefoot toads and suitable breeding habitat for this species (i.e., vernal pools or ephemeral pools, including some ponded water which holds water for at least two weeks to one month) prior to the start of ground disturbing activities. The absence of western spadefoot can only be confirmed through the species-specific surveys described in MM BIO-6b. Thus, if only pre-construction surveys for other species are conducted for western spadefoot, then the presence of western spadefoot shall be assumed pursuant to MM BIO-6d.</p> <p>[Continued on next page.]</p>

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

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
4.4. BIOLOGICAL RESOURCES (CONT'D)	
BIO-6. Impacts to Western Spadefoot Toad and North-	western Pond Turtle (Cont'd)
<u>VCIP Energy Resource and Infrastructure Plans.</u> (Cont'd)	<p>[Continued from preceding page.]</p> <p>Pre-construction surveys for the northwestern pond turtle shall also be conducted during this time. If construction is scheduled to begin during northwestern pond turtle nesting season (late May through mid-July), a qualified biologist shall conduct a survey within the project site for nests within 1,000 feet of any suitable water feature. If a northwestern turtle nest is observed, a construction-free buffer shall be established by the qualified biologist around the nest until young have hatched and moved from the nest. If spadefoot or northwestern pond turtle individuals of these species are found to be present on a project site prior to or during project construction, they shall be allowed to move off-site independently. Alternatively, a qualified biologist may assist the individual(s) with moving off the project site.</p> <p>d) <u>Avoidance and Monitoring.</u> If a northwestern pond turtle is identified during pre-construction surveys within any area subject to project impacts, the turtle shall be avoided until it has moved out of the work area on its own or relocated by the qualified biologist.</p> <p>If potential breeding habitat for western spadefoot is identified during preconstruction surveys within or immediately adjacent to an area subject to project impacts, and species-specific surveys described in MM BIO-6b have not been conducted, then presence of the western spadefoot on the site shall be assumed. A project activity-buffer of 860 feet (262 meters) from those breeding pools shall be established, as this is the maximum distance spadefoot toads have been recorded away from their breeding pool. This distance is necessary, as spadefoot toads dig straight down and leave no trace on the surface of where they are located, and they spend most of their lives underground—without an indication of where they are buried; therefore, a conservative buffer must be established. Buffers shall remain until absence can be confirmed through appropriate surveys as specified in MM BIO-6b.</p> <p>e) <u>Compensation.</u> If impacts to western spadefoot toads are anticipated, mitigation shall consist of either: 1) preservation of suitable on- or off-site land at a minimum of a 1:1 impact-to-mitigation ratio of lost habitat acreage to compensatory habitat acreage which can support the various lifecycles of the western spadefoot; or 2) purchase of credits equivalent to the lost habitat at an appropriate mitigation bank. As this species is currently a federal candidate species which is anticipated to be listed under the ESA, the project proponent may seek a Biological Opinion for this species in anticipation of it being listed. Once the species is federally listed under the ESA, a Biological Opinion would be required for any impacts to the western spadefoot.</p> <p>Significance after Mitigation: Less-than-Significant Impact.</p>

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

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
4.4. BIOLOGICAL RESOURCES (CONT'D)	
BIO-7. Impacts to Blunt-Nosed Leopard Lizard	
<p>VCIP Energy Resource and Infrastructure Plans. Implementation of the VCIP Energy Resource and Infrastructure Plans could result in potentially substantial adverse impacts to the blunt-nosed leopard lizard, a federal and state listed endangered species. <i>(Less-than-Significant Impact with Mitigation)</i></p>	<p>MM BIO-7: Protection of Blunt-Nosed Leopard Lizard</p> <p>To avoid mortality of the blunt-nosed leopard lizard due to VCIP implementation, the following mitigation measures are applicable at the project-specific level:</p> <ol style="list-style-type: none"> Species-Specific Surveys. Species-specific surveys for blunt-nosed leopard lizard are required for projects planned within open/natural lands located west of I-5. Protocol-level surveys in suitable habitat for the blunt-nosed leopard lizard by qualified biologists shall be completed following CDFW's <i>Revised Approved Survey Methodology for the Blunt-nosed Leopard Lizard</i> (2019) or its most recent guidelines to determine the presence or absence of blunt-nosed leopard lizard prior to the start of ground disturbing activities. This protocol requires a minimum of two surveyors and includes 12 days of adult surveys between April 15 and July 15 with a maximum of four survey days per week and eight survey days within any 30-day period; at least one survey session should be conducted for four consecutive days. Additionally, five juvenile surveys are required between August 15-September 30, with at least two survey days between August 15-30 and at least two survey days between September 15-30. If the surveys detect the presence of blunt-nosed leopard lizards on the project site, then avoidance and compensation measures are required, as specified in MM BIO-7b. If the surveys fail to detect blunt-nosed leopard lizards on the project site, then no further action is required. Avoidance and Compensation. If a blunt-nosed leopard lizard is identified during surveys within or immediately adjacent to an area subject to ground disturbing activities, the project should be redesigned to avoid the area where blunt-nosed leopard lizards occur. If the project cannot avoid occupied habitat, the project proponent shall obtain a take permit and follow avoidance, minimization and possibly compensation measures specified in the permit. A take permit from the USFWS (likely under Section 10 of ESA) and ITP from CDFW (2081 Application under CESA) would likely be required. The project proponent would be required to develop procedures to avoid and minimize take, while compensating for lost habitat at a minimum of a 3:1 (compensation-to-impact) ratio. This compensation could occur either on- or off-site and would need to preserve lands via a conservation easement or some other legal instrument which protects and manages the land in perpetuity. The project proponent would be required to identify the area for preservation, develop a Long-Term Management Plan (LTMP) that maintains the conservation value of the land, and provide adequate funding based on the strategies of the LTMP. <p>Significance after Mitigation: Less-than-Significant Impact.</p>

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

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
4.4. BIOLOGICAL RESOURCES (CONT'D)	
BIO-8. Impacts to Swainson's Hawks	
<p><u>VCIP Energy Resource and Infrastructure Plans.</u> Implementation of the VCIP Energy Resource and Infrastructure Plans could result in potentially substantial adverse impacts to the Swainson's hawk, a state listed threatened species. <i>(Less-than-Significant Impact with Mitigation)</i></p>	<p>MM BIO-8: Protection of Swainson's hawk</p> <p>To reduce the potential impacts to Swainson's hawks due to VCIP implementation, the following mitigation measures are applicable at the project-specific level:</p> <p>a) <u>Pre-construction Surveys for Swainson's Hawk.</u> During the nesting season prior to the construction on the project site within a half mile of a potential nest tree, preconstruction surveys shall be conducted within the construction zones and adjacent lands to identify any nesting pairs of Swainson's hawks. These surveys shall conform to the guidelines of CDFW as presented in <i>RECOMMENDED TIMING AND METHODOLOGY FOR SWAINSON'S HAWK NESTING SURVEYS IN CALIFORNIA'S CENTRAL VALLEY</i>, Swainson's Hawk Technical Advisory Committee, May 31, 2000 and any updates to these guidelines. Pre-construction surveys are not required for construction zones located farther than a half mile from a potential nest tree.</p> <p>b) <u>Nest Avoidance Measures.</u> If an active nest is found within one-half mile of a planned construction zone, a qualified biologist shall establish a suitable construction-free buffer around the nest. The biologist shall establish the buffer based on topography, nature of construction work, distance to the nest tree, and individual behavior of the nesting pair and young, if they are present. This buffer shall be identified on the ground with flagging or fencing and shall be maintained until the biologist has determined the young have fledged.</p> <p>If it is necessary to undertake construction work within the established buffer, a qualified biologist familiar with the active nest should establish a record of "regular" behavior of the nesting pair, and then establish an exclusion zone based on the tolerance of the nesting pair to construction activity in the vicinity of the nest. The qualified biologist shall conduct monitoring of the nest whenever work is planned to occur within the buffer. If a change in behavior from the previously observed "regular" behavior occurs, the qualified biologist shall increase the size of the exclusion zone or reestablish the original standard buffer.</p> <p>[Continued on next page.]</p>

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

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
4.4. BIOLOGICAL RESOURCES (CONT'D)	
BIO-8. Impacts to Swainson's Hawks (Cont'd)	
<u>VCIP Energy Resource and Infrastructure Plans. (Cont'd)</u>	<p><i>[Continued from preceding page.]</i></p> <p>c) <u>Mitigation for Loss of Breeding Habitat.</u> If it is determined that a Swainson's hawk nest tree(s) is located on or near the individual project site (within 0.5 mile) and was used by a nesting pair within the previous 5 years, the qualified biologist shall coordinate with the project proponent to determine whether the nest tree(s) is planned to be directly impacted (removed) or if the nest tree is planned to be preserved such that potential impacts to the nesting Swainson's hawks would only occur during nesting season.</p> <p>If the nest tree(s) is not planned to be permanently impacted, the project shall include establishment of a permanent buffer zone(s) of adequate size around nest tree location(s). The buffer zone shall require adequate management for the life of the project to ensure the buffer area remains suitable for Swainson's hawks. Annual monitoring of the suitability of management activities may be required by CDFW.</p> <p>If the project will impact a nest tree, avoidance and minimization measures shall be implemented during the nesting season, as specified in MM BIO-3b and MM BIO-3c above, and an off-site conservation easement shall be required as described below. If removal of a nest tree is planned to occur within the nesting season prior to active nesting, a temporary nest structure shall be established within 0.5 mile of the tree to be removed and shall remain in place throughout the nesting season</p> <p>The potential impact to nest trees shall be compensated for through a conservation easement or through purchase of credits at a conservation bank for Swainson's hawk breeding habitat (nest trees and associated foraging habitat). The conservation easement shall be established at a 1:1 ratio for foraging/breeding habitat preservation. The easement shall include habitats determined to be suitable for foraging and/or breeding year-round and seasonal use. The easement must include a tree of suitable nesting type and size as well as additional plantings for new potential nest trees.</p> <p>d) <u>Tailgate Training for Workers.</u> Construction workers on all VCIP projects shall attend a tailgate training session conducted by a qualified biologist. The training shall include a description of the species, a brief summary of its biology and minimization measures and instructions on what to do if a Swainson's hawk is observed on or near the construction site.</p> <p>Significance after Mitigation: Less-than-Significant Impact.</p>

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

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
4.4. BIOLOGICAL RESOURCES (CONT'D)	
BIO-9. Impacts to Burrowing Owls	
<p><u>VCIP Energy Resource and Infrastructure Plans.</u> Implementation of the VCIP Energy Resource and Infrastructure Plans could result in the loss of foraging and breeding habitat for burrowing owls, a candidate species for state listing as threatened or endangered. <i>(Less-than-Significant Impact with Mitigation)</i></p>	<p><u>MM BIO-9: Protection of Burrowing Owls</u> To avoid or substantially reduce the potential impact to burrowing owls due to VCIP implementation, the following mitigation measures are applicable at the project-specific level:</p> <ul style="list-style-type: none"> a. <u>Pre-Construction Surveys for Burrowing Owl.</u> 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 the project site. These surveys shall be conducted according to methods described in the <i>Staff Report on Burrowing Owl Mitigation</i> (CDFG 2012) or the most recent CDFW guidelines. The surveys shall cover all areas of suitable burrowing owl habitat within the project site. b. <u>Avoidance of Active Burrowing Owl Nests During Breeding Season.</u> 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 buffer zones shall be enclosed with temporary fencing, and construction equipment and workers shall not be allowed to enter the enclosed setback areas. The buffer zones shall remain in place for the duration of the breeding season. c. <u>Avoidance of Occupied Burrows During Non-Breeding Season, and Passive Relocation of Burrowing Owls.</u> 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 150-250 feet around each burrow, with the required buffer distance to be determined in each case by a qualified biologist. Passive relocation of resident owls is not recommended by CDFW where it can be avoided. Given recent change in the burrowing owl's status to a state candidate species for listing, an ITP would likely be required to conduct passive relocation. d. <u>Mitigation for Loss of Burrowing Owl Habitat.</u> If it is determined that burrowing owl nest(s) are located on or near the individual project site, the qualified biologist shall coordinate with the project proponent to determine whether these nest(s) are to be impacted or if they are planned to be avoided. If the on-site or nearby nests are to remain in place, the biologist shall determine whether sufficient foraging habitat will be available on adjacent or nearby lands after project completion, 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.) <i>[Continued on next page.]</i>

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

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
4.4. BIOLOGICAL RESOURCES (CONT'D)	
BIO-9. Impacts to Burrowing Owls (Cont'd)	
<u>VCIP Energy Resource and Infrastructure Plans.</u> (Cont'd)	<p>[Continued from preceding page.]</p> <p>If it is determined that insufficient nearby foraging habitat would be available after project completion, the biologist shall determine the amount of off-site (or on-site) foraging habitat that would be required to sustain the burrowing owl pair. The potential impact to foraging habitat shall be either avoided through implementation of measure #1 below (onsite buffer zone), or compensated through implementation of measure #2 (conservation easement), or measure #3 (long-term agreement on adjacent lands), as set forth below:</p> <ol style="list-style-type: none"> 1) Establishment on the project site of a permanent buffer zone(s) of adequate size around current burrowing owl locations, such that the total acreage of onsite (potentially combined with adjacent offsite) habitat is sufficient to support the resident burrowing owls. These buffer zones shall require adequate management for the life of the project to ensure the buffer area remains suitable for burrowing owls. Annual monitoring of management activities may be required by CDFW; or 2) Establishment of an off-site conservation easement for foraging/breeding habitat preservation, with the lands covered by the easement containing sufficient acreage to support the impacted burrowing owls. The easement shall include habitats determined to be suitable for foraging and/or breeding year-round and seasonal use; or 3) Short or long-term compensation for foraging habitat by providing farmers on adjacent lands incentives to plant particular crops known to be suitable foraging habitat for burrowing owls (i.e., winter wheat, alfalfa, etc.) and to enact a farmer burrowing owl safety program where farmers are trained in how to reduce burrowing owl mortalities on their lands and farm roads. <p>e. <u>Tailgate Training for Workers.</u> Construction workers on all VCIP projects shall attend a tailgate training session conducted by a qualified biologist. The training shall include a description of the species, a brief summary of its biology and minimization measures and instructions on what to do if a burrowing owl is observed on or near the construction site.</p> <p>Significance after Mitigation: Less-than-Significant Impact.</p>

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

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
4.4. BIOLOGICAL RESOURCES (CONT'D)	
BIO-10. Impacts to Pallid Bat, Western Mastiff Bat, and other Bat Species	Bat Species
<p>VCIP Energy Resource and Infrastructure Plans. Implementation of the VCIP Energy Resource and Infrastructure Plans could result in potentially substantial adverse impacts to the pallid bat and western mastiff bat, both state species of special concern, and other bat species. <i>(Less-than-Significant Impact with Mitigation)</i></p>	<p>MM BIO-10: Protection of Bat Species To avoid harm or mortality to bats due to VCIP implementation, the following mitigation measures are applicable at the project-specific level:</p> <ul style="list-style-type: none"> a) <u>Initial Surveys.</u> The initial biological surveys required for the project under project MM BIO-1 shall identify if trees or buildings are on the project site. If no trees or buildings are present on the site, no further surveys or mitigation for bats is required. If trees or buildings are present on the project site, the following measures would apply. b) <u>Daytime Habitat Assessment/Humane Eviction.</u> A daytime bat assessment/survey shall be conducted prior to removal of any intact trees or buildings on the project site. If a non-breeding bat colony is observed, the individuals shall be humanely evicted via two-step removal process under the direction of a qualified biologist to ensure that no harm or “take” would occur to any bats as a result of building or intact tree removal activities. c) <u>Minimization.</u> If a maternity colony is detected, then a construction-free buffer zone shall be established around the applicable building or tree and remain in place until the nursery is no longer active. Removal of the building or tree should be conducted between March 1 and April 15 or between August 15 and October 15 to avoid interfering with an active nursery. <p>Significance after Mitigation: Less-than-Significant Impact.</p>
BIO-11. Impacts to Burrowing Mammals Including the San Joaquin Antelope Squirrel (SJAS), Short-Nosed Kangaroo Rat, and Giant Kangaroo Rat	
<p>VCIP Energy Resource and Infrastructure Plans. Implementation of the VCIP Energy Resource and Infrastructure Plans could result in potentially substantial adverse impacts to protected burrowing mammal species. <i>(Less-than-Significant Impact with Mitigation)</i></p>	<p>MM BIO-11: Protection of Protected Burrowing Mammal Species To avoid harm or mortality to protected burrowing mammal species due to VCIP implementation, the following mitigation measures are applicable at the project-specific level:</p> <ul style="list-style-type: none"> a) <u>Preliminary Surveys/Actions.</u> Preliminary daytime surveys shall be conducted to identify SJAS during their active season (April 1-September 30) in daylight hours between 20 and 30 degrees Celsius (68-86 degrees Fahrenheit). <p>[Continued on next page.]</p>

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

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
4.4. BIOLOGICAL RESOURCES (CONT'D)	
BIO-11. Impacts to Burrowing Mammals Including the San Kangaroo Rat)	Joaquin Antelope Squirrel (SJAS), Short-Nosed Kangaroo Rat, and Giant
<u>VCIP Energy Resource and Infrastructure Plans. (Cont'd)</u>	<p>[Continued from preceding page.]</p> <p>During these surveys, if kangaroo rat burrows are identified, live trapping by a qualified biologist may be required to ascertain presence or absence of the giant and short-nosed kangaroo rats, since both species can occupy kangaroo rat burrows. If preliminary surveys identify the project as supporting potentially suitable habitat for any of these species, the qualified biologist shall identify avoidable burrows within a particular work area. Any avoidable burrows shall be avoided as discussed below. Should preliminary surveys identify that there are unavoidable burrows within a particular work area, protocol-level surveys for the SJAS, giant kangaroo rat, and short-nosed kangaroo rat shall be conducted before starting construction activities in that work area.</p> <p>b) <u>Pre-construction Surveys.</u> During the preconstruction surveys for other species, if burrows are identified that were not previously identified during the preliminary surveys, a qualified biologist shall flag burrows within the project site and any off-highway access driveways for the project, and any other work areas within the open/natural lands. If preliminary surveys and pre-construction surveys fail to detect burrows, then no further action is required.</p> <p>c) <u>Avoidance and Compensation.</u> If burrows are identified during preconstruction surveys within or immediately adjacent to an area subject to project activity, a disturbance-free buffer zone of at least 10 meters shall be established for each burrow. If active burrows cannot be avoided, it may be necessary to obtain an ITP, under which suitable habitat may be required to be preserved either on- or off-site.</p> <p>Significance after Mitigation: Less-than-Significant Impact.</p>
BIO-12. Impacts to San Joaquin Kit Fox	
<u>VCIP Energy Resource and Infrastructure Plans.</u> Implementation of the VCIP Energy Resource and Infrastructure Plans could result in potentially substantial adverse impacts to the San Joaquin kit fox (SJKF), a federally listed endangered species. (Less-than-Significant Impact with Mitigation)	<p><u>MM BIO-12: Protection of San Joaquin Kit Fox</u></p> <p>To avoid harm or mortality to San Joaquin kit fox due to VCIP implementation, the following mitigation measures are applicable at the project-specific level:</p> <p>[Continued on next page.]</p>

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

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
4.4. BIOLOGICAL RESOURCES (CONT'D)	
BIO-12. Impacts to San Joaquin Kit Fox (Cont'd)	
<u>VCIP Energy Resource and Infrastructure Plans.</u> (Cont'd)	<p>[Continued from preceding page.]</p> <ul style="list-style-type: none"> a) <u>Pre-Construction Surveys for Kit Fox.</u> Pre-construction surveys for the SJKF 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 SJKF. These surveys shall be conducted in accordance with the “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 or the most recent USFWS guidelines. The primary objective of these recommendations is to identify kit fox habitat features (e.g., potential dens and refugia) on the project site 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) <u>Kit Fox Avoidance Measures.</u> Should kit fox be found to be using the project site during pre-construction 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) <u>Tailgate Training for Workers.</u> All workers on the project shall attend a tailgate training session conducted by a qualified biologist. The training shall include a description of the species, a brief summary of their biology, and minimization measures and instructions on what to do if a SJKF is observed on the project site. d) <u>Minimization of Potential Disturbance to Kit Fox.</u> 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 USFWS’s standard recommendations provided above and set forth in full in Table BIO-1. <p>[Continued on next page.]</p>

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

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
4.4. BIOLOGICAL RESOURCES (CONT'D)	
BIO-12. Impacts to San Joaquin Kit Fox (Cont'd)	
<u>VCIP Energy Resource and Infrastructure Plans.</u> (Cont'd)	<p>[Continued from preceding page.]</p> <p>e) <u>Mortality Reporting.</u> The Sacramento Field Office of the USFWS and the Fresno Field Office of CDFW shall be notified in writing within three working days in case of the accidental death or injury to a SJKF during project-related activities. Notification must include the date, time, location of the incident or of the finding of a dead or injured animal, and any other pertinent information.</p> <p>f) <u>Minimization.</u> If active dens are identified during pre-activity surveys within or immediately adjacent to an area subject to project activity, a disturbance-free buffer zone of at least 300 feet shall be established around the active den. This buffer shall be maintained until the young have moved on from the den. Once the den has been confirmed to be inactive by a qualified biologist, it shall be excavated, then collapsed. If active burrows cannot be avoided, an ITP may be required.</p> <p>g) <u>Wildlife-friendly Fencing.</u> The perimeter fencing surrounding each phase of the project shall consist of wildlife-friendly or permeable fencing that allows SJKF and other wildlife to move through the site unimpeded. The bottom of the perimeter fencing shall be 5 to 7 inches above the ground, as measured from the top of the ground to the lowest point of the fence. The bottom of the fence edges shall be knuckled (wrapped back to form a smooth edge) to allow wildlife to pass through safely. The fencing shall not be electrified.</p> <p>Significance after Mitigation: Less-than-Significant Impact.</p>

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 (CNDDDB). 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)
4.4. BIOLOGICAL RESOURCES (CONT'D)	
BIO-13. Impacts to American Badger	
<p><u>VCIP Energy Resource and Infrastructure Plans.</u> Implementation of the VCIP Energy Resource and Infrastructure Plans could result in potentially adverse impacts to the American badger, a California Species of Special Concern. <i>(Less-than-Significant Impact with Mitigation)</i></p>	<p><u>MM BIO-13: Protection of American Badger</u> To avoid harm or mortality to San Joaquin kit fox due to VCIP implementation, the following mitigation measures are applicable at the project-specific level:</p> <ul style="list-style-type: none"> a. <u>Pre-construction Surveys for American Badger.</u> 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 project proponent so stating and no other mitigations for the protection of badgers would be required. b. <u>Avoidance of Active Badger Dens and Monitoring.</u> 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 shall be established around the den. Once the qualified biologist has determined that badgers have vacated the burrow, the burrow shall 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 to be present onsite until it is determined that young are of an independent age and construction or decommissioning activities would not harm individual badgers. Once the den has been confirmed to be inactive by the qualified biologist, it may be excavated, then collapsed. c. <u>Tailgate Training for Workers.</u> Construction workers on all VCIP projects shall attend a tailgate training session conducted by a qualified biologist. The training shall 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 the project site. <p>Significance after Mitigation: Less-than-Significant Impact.</p>

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

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
4.4. BIOLOGICAL RESOURCES (CONT'D)	
BIO-14. Impacts to Wildlife Movement Corridors	
VCIP Energy Resource and Infrastructure Plans. Implementation of the VCIP Energy Resource and Infrastructure Plans would not interfere with the home range and dispersal movements of native wildlife. <i>(Less-than-Significant Impact)</i>	No mitigation is required.
BIO-15. Potential Hazards to Avian Species	
VCIP Energy Resource and Infrastructure Plans. Implementation of the VCIP Energy Resource and Infrastructure Plans could result in potential hazards to avian species due to night lighting, lake effect, collision, and electrocution. <i>(Less-than-Significant Impact with Mitigation)</i>	<p>MM BIO-14: Protection of Avian Species from Risk of Collision and Electrocution To avoid harm or mortality to avian species due to risk of collision with solar arrays, and risk of collision and electrocution at transmission lines, the following mitigation measures are applicable at the project-specific level:</p> <ul style="list-style-type: none"> a. <u>Reduce Potential for Bird Collisions with Solar Arrays.</u> At the end of each day, the solar panels shall be set at a near vertical position to avoid a horizontal resting position which may attract birds which could mistake the arrays for water surfaces. b. <u>Reduce Potential for Bird Collisions and Electrocutions with Power Lines.</u> To minimize the potential for bird collisions and electrocutions with power lines, the VCIP gen-tie and transmission lines shall be designed, constructed, and maintained in accordance with the following APLIC guidelines: <i>Reducing Avian Collisions with Power Lines: The State of the Art in 2012</i> (APLIC 2012) and <i>Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006</i> (APLIC 2006). <p>Significance after Mitigation: Less-than-Significant Impact.</p>
BIO-16. Impacts to Jurisdictional Waters and Riparian Habitats	
VCIP Energy Resource and Infrastructure Plans. Implementation of the VCIP Energy Resource and Infrastructure Plans could result in potentially adverse impacts to jurisdictional waters and riparian habitats. <i>(Less-than-Significant Impact with Mitigation)</i>	<p>MM BIO-15: Jurisdictional Waters and Riparian Habitat If a proposed VCIP project includes plans to place fill or structures within a wetland, jurisdictional water, or riparian habitat, the following mitigation measures are applicable at the project-specific level to ensure consistency with applicable “no net loss” policies:</p> <p>[Continued on next page.]</p>

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

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
4.4. BIOLOGICAL RESOURCES (CONT'D)	
BIO-16. Impacts to Waters of the U.S. and Riparian Habitats (Cont'd)	
<u>VCIP Energy Resource and Infrastructure Plans. (Cont'd)</u>	<p>[Continued from preceding page.]</p> <ul style="list-style-type: none"> a. <u>Minimization of Impact.</u> If a proposed VCIP project includes plans to fill a Water of the U.S., and/or a Water of the State, the project shall be designed to minimize impacts to such Waters to the maximum extent practicable. b. <u>Compensatory Mitigation.</u> If avoidance is not practicable, compensation for the loss of Waters of the U.S. and/or Waters of the State may be required unless a waiver is granted. This may be accomplished by purchasing in-kind credits at an approved mitigation bank, payment into an established in-lieu fund, or through the preservation of onsite or offsite lands with similar hydrologic features. Any preservation lands would be placed under conservation easement held by a third party and managed in perpetuity with an agency approved endowment fund. c. <u>Creation of New Wetlands.</u> As an alternative to Mitigation Measure BIO-16b, a project proponent may compensate for the loss of Waters of the U.S. and/or State through the creation of in-kind waters at a ratio determined by the USACE and/or RWQCB on preserved lands, onsite or offsite, which have characteristics necessary for creation of similar hydrologic features. Such created wetland would be placed under conservation easement held by a third party and managed in perpetuity with an agency approved endowment fund. d. <u>Employee Education Program.</u> During the construction phases of the project, a qualified biologist shall conduct an environmental awareness program for all construction and onsite personnel. Training shall include a discussion of avoidance and minimization measures being implemented to protect biological resources (including jurisdictional Waters and wetlands) as well as terms and conditions of the permits. <p>Significance after Mitigation: Less-than-Significant Impact.</p>
BIO-17. Local Policies or Ordinances Protecting Biological	Resources
<u>VCIP Energy Resource and Infrastructure Plans.</u> Implementation of the VCIP Energy Resource and Infrastructure Plans 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)
4.4. BIOLOGICAL RESOURCES (CONT'D)	
BIO-18. Habitat Conservation Plans	
VCIP Energy Resource and Infrastructure Plans. Implementation of the VCIP Energy Resource and Infrastructure Plan would not conflict with adopted habitat conservation plans or other approved local, regional or state habitat conservation plans. <i>(Less-than-Significant Impact)</i>	Implement MM BIO-1, BIO-2, BIO-7, BIO-11, and BIO-12.
4.5. CULTURAL AND TRIBAL CULTURAL RESOURCES	
CUL-1. Disturbance to Cultural Resources	
VCIP Energy Resource and Infrastructure Plans. Implementation of the VCIP Energy Resource and Infrastructure Plans could have potentially adverse impacts on historical and prehistoric archaeological resources (cultural resources) which may be present within the Plan Area. <i>(Less-than-Significant Impact with Mitigation)</i>	<p><u>MM CUL-1: Protection of Cultural Resources</u></p> <p>To reduce potential impacts to cultural resources from VCIP implementation, the following mitigation measures are applicable at the project-specific level. The lands subject to development under VCIP are classified into five archaeological sensitivity zones as mapped on the Archaeological Sensitivity Maps prepared for the VCIP PEIR. The mitigation measures applicable to the five zones are separated into three groups, as follows: a) Measures applicable to all VCIP development; b) Measures applicable to lands with Highest/High/Moderate sensitivity (which are grouped together because these categories represent a continuum); and c) Measures applicable to lands with Low/Lowest sensitivity.</p> <p>a) <u>Measures Applicable to All VCIP Development</u></p> <p>i) <u>Retain Qualified Archeologist and Conduct Archaeological Review.</u> During the project-level environmental review process under CEQA, the project proponent shall retain a professional archaeologist consultant meeting the Secretary of the Interior's Standards and having expertise in California prehistoric and historical archaeology (the Qualified Archaeologist). The Qualified Archeologist shall complete a due diligence archaeological review of the project site which shall include at a minimum: (1) an archival records search by the California Historical Resources Information System, Southern San Joaquin Valley Information Center, California State University Bakersfield (CHRIS/SSJVIC) for a 0.25 mile radius around the project site boundaries; (2) a review of historic sources and maps of the project site to determine historic sensitivity; and, (3) the results of a Sacred Lands File (SLF) by the NAHC. The results shall be reported in a Memorandum to File with appropriate graphics and any supporting documents. <i>[Continued on next page.]</i></p>

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

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
4.5. CULTURAL AND TRIBAL CULTURAL RESOURCES (CONT'D)	
CUL-1. Disturbance to Cultural Resources (Cont'd)	
<u>VCIP Energy Resource and Infrastructure Plans.</u> (Cont'd)	<p>[Continued from preceding page.]</p> <ul style="list-style-type: none"> ii) <u>Cultural Resources Notice on Construction Plans.</u> The project proponent shall note on any plans that require ground disturbing excavation that there is potential for exposing buried cultural resources, including prehistoric Native American ancestral remains. Any archival archaeological site information supplied to the construction contractor shall be considered confidential. iii) <u>Worker Education and Awareness Program (WEAP) Training.</u> Prior to the issuance of building permits for each VCIP project, the Qualified Archeologist shall provide a cultural resources and tribal cultural resources sensitivity and awareness training program (WEAP) for all personnel involved in ground disturbing project construction, including field consultants and construction workers. If additional construction personnel join the project after the start of construction, additional trainings will be held. Documentation shall be retained demonstrating that all construction personnel attended the training. <p>The WEAP shall be developed by the Qualified Archaeologist in coordination with the Tribal Historic Preservation Officer (THPO) of the Santa Rosa Rancheria Tachi Yokut Tribe. The WEAP shall be conducted before any project-related construction activities begin at the project site. The WEAP shall include relevant information regarding sensitive cultural resources, including applicable regulations, protocols for avoidance, and consequences of violating State laws and regulations. The WEAP shall also describe appropriate avoidance and impact minimization measures for cultural resources that could be located at the project site and shall outline what to do and who to contact if any potential cultural resources are encountered. The WEAP shall emphasize the requirement for confidentiality and culturally appropriate treatment of any discovery of significance.</p> <ul style="list-style-type: none"> iv) <u>Implement Procedures for Inadvertent Discoveries.</u> The Qualified Archaeologist shall be retained during all ground disturbing activity during construction and decommissioning for the project to provide assistance in the event of any unexpected archaeological discoveries during construction. Should previously unidentified cultural resources be discovered during construction of the project, all ground disturbing activities shall stop within 100 feet of the find, and the appropriate regulatory agency and the Santa Rosa Rancheria Tachi Yokut Tribe shall be notified immediately. The Qualified Archeologist shall assist with the review, identification and evaluation of the cultural resources to determine if they are historical resource(s) and/or unique archaeological resources or tribal cultural resources under CEQA. <p>[Continued on next page.]</p>

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

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
4.5. CULTURAL AND TRIBAL CULTURAL RESOURCES (CONT'D)	
CUL-1. Disturbance to Cultural Resources (Cont'd)	
<u>VCIP Energy Resource and Infrastructure Plans.</u> (Cont'd)	<p>[Continued from preceding page.]</p> <p>If the Qualified Archaeologist determines that any cultural resources exposed during construction constitute a historical resource and/or unique archaeological resource or tribal cultural resource under CEQA, he/she shall notify the project proponent and other appropriate parties including the Tribe of the evaluation.</p> <p>The Qualified Archaeologist shall recommend mitigation measures to mitigate to less-than significant any potential impact in accordance with California Public Resources Code Section 15064.5. Tribal cultural resources shall be evaluated in consultation with the Tribal Historic Preservation Officer (THPO) of the Santa Rosa Rancheria Tachi Yokut Tribe. Mitigation measures may include avoidance, preservation in-place, recordation, archaeological and tribal monitoring, archaeological testing and data recovery among other options. Construction within the 50-foot exclusion zone shall only be allowed to commence when mitigation has been completed.</p> <p>The archaeologist shall document the resources using DPR 523 forms and file said forms with the California Historical Resources Information System, Southern San Joaquin Valley Information Center. The resources shall be photo-documented and collected by the archaeologist for submittal to the Santa Rosa Rancheria's Cultural and Historical Preservation Department. The archaeologist shall be required to submit to the appropriate regulatory agency for review and approval a report of the findings 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.</p> <p>If significant archaeological deposits (or tribal cultural resources) are exposed during ground disturbing construction, a formal <i>Archaeological Monitoring Plan</i> (AMP) and/or <i>Archaeological Treatment Plan</i> (ATP) that may include data recovery shall be developed and implemented, as recommended by the Qualified Archaeologist. The AMP shall provide that the Santa Rosa Rancheria Tachi Yokut Tribe shall be given the opportunity to provide a Tribal Monitor during ground disturbing activities during both construction and decommissioning, within areas of the project site which have been determined by the Qualified Archaeologist to have a high potential to yield archaeological resources. Tribal participation would be dependent upon the availability and interest of the Santa Rosa Rancheria Tachi Yokut Tribe. The final details of the AMP and/or ATP, and treatment of significant cultural resources and/or tribal cultural resources, shall be determined by the project proponent in consultation with the approving agency and the THPO of the Santa Rosa Rancheria Tachi Yokut Tribe. [Continued on next page.]</p>

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

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
4.5. CULTURAL AND TRIBAL CULTURAL RESOURCES (CONT'D)	
CUL-1. Disturbance to Cultural Resources (Cont'd)	
<u>VCIP Energy Resource and Infrastructure Plans. (Cont'd)</u>	<p>[Continued from preceding page.]</p> <p>b) <u>Measures Applicable to VCIP Development in Highest/High/Moderate Sensitivity Areas</u></p> <p>i) <u>Prepare Archaeological Resources Assessment.</u> The project proponent shall retain the Qualified Archaeologist to complete a formal <i>Archaeological Resources Assessment</i> (ARA) of any project site located within Highest/High/Moderate sensitivity areas as mapped on the Prehistoric Cultural Resources Sensitivity Maps prepared for the VCIP PEIR. The ARA shall include: (1) an archival records search by the California Historical Resources Information System, Southern San Joaquin Valley Information Center, California State University Bakersfield (CHRIS/SSJVIC) for a 0.25 mile radius around the project site boundaries; (2) a review of historic sources and maps of the project site to determine historic sensitivity; (3) the results of a Sacred Lands File (SLF) search by the NAHC and any required outreach to local tribes and individuals; (4) a systematic field inventory of the project site with an emphasis on areas identified as highest/high/moderate sensitivity; and, (5) completion of a report with findings/recommendations including general mitigation measures for any development within the VCIP (see MM CUL-1a) as well as any additional site-specific mitigation measures based on the findings of the research and field inventory completed for the ARA.</p> <p>ii) <u>Additional Mitigation Measures.</u> Additional mitigation measures applicable to project sites within the Highest/High/Moderate sensitivity areas include the following:</p> <p>(1) If recommended by the Qualified Archaeologist, undertake completion of a presence/absence archaeological testing program prior to construction to determine the subsurface archaeological sensitivity of the project site and the potential for exposing both prehistoric and historic subsurface cultural materials during future ground disturbing construction.</p> <p>(2) If recommended by the Qualified Archaeologist, conduct archaeological and tribal monitoring of ground disturbing construction of the archaeologically sensitive areas within the project site to a maximum depth of 5 feet below existing grade in accordance with the protocols presented in a site specific AMP (see MM CUL-1a (iv)). The Plan Area is generally within Holocene fan and basin deposits that coincide with the human occupation of central California. Excavations 5 feet or deeper would generally be in older Pleistocene deposits that do not include human occupation of the Plan Area. In the event of an unexpected discovery below 5 feet of the existing ground surface, implement the measures specified in MM CUL-1 (a)(iv). [Continued on next page.]</p>

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

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
4.5. CULTURAL AND TRIBAL CULTURAL RESOURCES (CONT'D)	
CUL-1. Disturbance to Cultural Resources (Cont'd)	
<u>VCIP Energy Resource and Infrastructure Plans.</u> (Cont'd)	<p><i>[Continued from preceding page.]</i></p> <p>If an AMP is required, then it shall be developed and approved by the approving agency prior to the start of construction to avoid delays during construction by allowing immediate implementation of the AMP after an unexpected discovery of significant cultural materials that may require archaeological and tribal monitoring.</p> <p>(3) If recommended by the Qualified Archaeologist, conduct tribal monitoring during decommissioning of the facility in accordance with the approved AMP to a maximum depth of 5 feet below original ground surface.</p> <p>(4) If recommended by the Qualified Archaeologist, develop an ATP with protocols to be implemented in the event that data recovery is the preferred action to recover significant historical or unique archaeological resources (or tribal cultural resources) exposed during ground disturbing construction. If an ATP is required, then it shall be prepared by the Qualified Archaeologist, in consultation with the Tribe and project proponent, and approved by the approving agency prior to the start of construction to avoid delays during construction by allowing immediate implementation of the ATP after an unexpected discovery of cultural materials that may require data recovery.</p> <p>c) <u>Mitigation Measures Applicable to VCIP Development in Low/Lowest Sensitivity Areas.</u> Implement MM CUL-1a. Measures Applicable to All VCIP Development. No additional mitigation for these areas is required.</p> <p>Significance after Mitigation: Less-than-Significant Impact.</p>

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

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
4.5. CULTURAL AND TRIBAL CULTURAL RESOURCES (CONT'D)	
CUL-2. Potential Disturbance to Buried Native American Ancestral Remains	
<p><u>VCIP Energy Resource and Infrastructure Plans.</u> Implementation of the VCIP Energy Resource and Infrastructure Plans could have potentially adverse impacts on any buried ancestral remains which may be present within the Plan Area. <i>(Less-than-Significant Impact with Mitigation)</i></p>	<p>MM CUL-2: Protection of Native American Ancestral Remains To reduce potential impacts to Native American ancestral remains from VCIP implementation, the following mitigation measures are applicable at the project-specific level:</p> <ul style="list-style-type: none"> a) Pursuant to Health and Safety Code section 7050.5(b) and PRC, 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 Fresno County Coroner shall be notified immediately. If the remains are determined to be Native American, the Coroner shall notify the NAHC, who shall identify the person believed to be the Most Likely Descendant (MLD). The project proponent and MLD, with the assistance of the Qualified 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, section 15064.5(e)). The agreed upon treatment plan shall address the appropriate excavation, removal, recordation, analysis, custodianship, curation, and final disposition of the human remains and associated or unassociated funerary objects. PRC, section 5097.98(a) allows up to 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 PRC, 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 human remains with appropriate dignity on the property in a location not subject to further and future subsurface disturbance." b) The treatment plan shall be implemented, and any findings shall be submitted by the Qualified Archaeologist in a professional report to the project proponent, the appropriate regulatory agency, the MLD and the Tachi Yokut Tribe, and the CHRIS/SSJVIC. <p>Significance after Mitigation: Less-than-Significant-Impact.</p>
CUL-3. Potential Impacts to Tribal Cultural Resources	
<p><u>VCIP Energy Resource and Infrastructure Plans.</u> Implementation of the VCIP Energy Resource and Infrastructure Plans could have potentially adverse impacts on any tribal cultural resources which may be present within the Plan Area. <i>(Less-than-Significant Impact with Mitigation)</i></p>	<p>Implement MM CUL-1 (Protection of Cultural Resources) and MM CUL-2 (Protection of Native American Ancestral Remains). Significance after Mitigation: Less-than-Significant Impact.</p>

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

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
4.6. ENERGY	
EN-1. Wasteful, Inefficient, or Unnecessary Consumption of	Energy
<u>VCIP Energy Resource and Infrastructure Plans.</u> Implementation of the VCIP Energy Resource and Infrastructure Plans would not result in potentially significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy, during project construction or operation. <i>(Less-than-Significant Impact)</i>	No mitigation is required.
EN-2. Conflict With or Obstruct a State or Local Plan for	Renewable Energy or Energy Efficiency
<u>VCIP Energy Resource and Infrastructure Plans.</u> Implementation of the VCIP Energy Resource and Infrastructure Plans would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. The VCIP would instead advance these plans by facilitating new sources of renewable energy. <i>(Less-than-Significant Impact)</i>	No mitigation is required.
4.7. GEOLOGY, SOILS AND PALEONTOLOGICAL RESOURCES	
GEO-1. Rupture of Known Earthquake Fault	
<u>VCIP Energy Resource and Infrastructure Plans.</u> There are no known active or potentially active earthquake faults in proximity to the VCIP Plan Area; therefore, the potential for impact from fault rupture is extremely low and not reasonably foreseeable. <i>(Less-than-Significant Impact)</i>	No mitigation is required.
GEO-2. Seismic Ground Shaking	
<u>VCIP Energy Resource and Infrastructure Plans.</u> Moderate to strong ground shaking expected within the VCIP Plan Area during a moderate to severe earthquake could result in damage to solar generating facilities, energy storage systems, substation, and transmission and gen-tie lines; however, any potential impacts would be addressed through compliance with existing regulations, standards, and codes. <i>(Less-than-Significant Impact)</i>	No mitigation is required.

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

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
4.7. GEOLOGY AND SOILS (CONT'D)	
GEO-3. Liquefaction, Lateral Spreading, and Seismic Settlement	
VCIP Energy Resource and Infrastructure Plans. There is potential for seismically-induced liquefaction, lateral spreading, and settlement within the VCIP Plan Area which could result in damage to foundations and structures; however, any potential impacts would be addressed through compliance with existing regulations, codes, and standards. <i>(Less-than-Significant Impact)</i>	No mitigation is required.
GEO-4. Landslide Hazard	
VCIP Energy Resource and Infrastructure Plans. The level terrain of the VCIP Plan Area has very low potential for landslides, and thus there would be no impact from landslide hazards to project construction, operation, or decommissioning. <i>(Less-than-Significant Impact)</i>	No mitigation is required.
GEO-5. Expansive Soils	
VCIP Energy Resource and Infrastructure Plans. Most soil units within the VCIP Plan Area consist of clay soils that have high potential for expansion, which could result in potential damage to foundations and structures; however, any potential impacts would be addressed through compliance with existing regulations, codes, and standards. <i>(Less-than-Significant Impact)</i>	No mitigation is required.
GEO-6. Erosion Potential	
VCIP Energy Resource and Infrastructure Plans. Development of the VCIP energy resource and infrastructure projects could cause water- and wind-related soil erosion during construction and operation of the solar and energy facilities; however, with implementation of erosion control measures specified in the state-mandated Storm Water Pollution Prevention Plans (SWPPPs) for each VCIP project, the potential erosion impacts would be less than significant. <i>(Less-than-Significant Impact)</i>	No mitigation is required.

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

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
4.7. GEOLOGY AND SOILS (CONT'D)	
GEO-7. Soil Corrosivity	
<u>VCIP Energy Resource and Infrastructure Plans.</u> Corrosive soils within the VCIP Plan Area could cause damage to project structures, foundations, and utilities; however, any potential impacts would be addressed through compliance with existing regulations, codes, and standards. <i>(Less-than-Significant Impact)</i>	No mitigation is required.
GEO-8. Soil Suitability for Wastewater Disposal	
<u>VCIP Energy Resource and Infrastructure Plans.</u> The domestic wastewater disposal requirements for operation of VCIP facilities would be provided by septic tanks and leach fields designed and constructed in accordance with County requirements, ensuring that the soils would be capable of adequately accommodating the effluent generated by the VCIP projects. <i>(Less-than-Significant Impact)</i>	No mitigation is required
GEO-9. Loss of Paleontological Resources	
<u>VCIP Energy Resource and Infrastructure Plans.</u> Construction of VCIP energy resource and infrastructure projects could result in the destruction of paleontological resources. <i>(Less-than-Significant Impact with Mitigation)</i>	<p>MM GEO-1: Protection of Paleontological Resources</p> <p>To avoid potentially significant impacts to paleontological resources from VCIP implementation, the following mitigation measures are applicable at the project-specific level. The lands subject to development under the VCIP are classified as having either high or low paleontological sensitivity. Therefore, the following mitigation measures are separated into three groups, as follows: a) Measures applicable to all VCIP development; b) Measures applicable to lands with high paleontological sensitivity; and c) Measures applicable to lands with low paleontological sensitivity.</p> <p>a) <u>Measures Applicable to All VCIP Development</u></p> <p>i) <u>Retain Qualified Paleontologist.</u> Prior to initial ground disturbance, the project proponent shall retain a Qualified Paleontologist, defined as a paleontologist who meets the Society of Vertebrate Paleontology's (SVP) standards.</p> <p>ii) <u>Worker Education and Awareness Program (WEAP) Training.</u> Prior to commencement of ground disturbing activities for construction, the Qualified Paleontologist or his or her designee, shall conduct WEAP training for construction personnel regarding the appearance of fossils and the procedures for notifying paleontological staff should fossils be discovered by construction staff. <i>[Continued on next page.]</i></p>

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

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
3.7. GEOLOGY AND SOILS (CONT'D)	
GEO-9. Loss of Paleontological Resources (Cont'd)	
<u>VCIP Energy Resource and Infrastructure Plans (Cont'd).</u>	<p>[Continued from preceding page.]</p> <ul style="list-style-type: none"> iii) <u>Unexpected Fossil Discovery.</u> In the event of a fossil discovery by construction personnel, all work within 50 feet of the find (the "exclusion zone") shall cease, and the Qualified Paleontologist shall be contacted to evaluate the significance of the resource and make recommendations for the treatment, recovery, and curation of the resource, as appropriate. Work within the exclusion zone shall not recommence until the Qualified Paleontologist has completed the site evaluation and recovery process. b. <u>Additional Mitigation Measures Applicable Only to Lands with High Paleontological Sensitivity.</u> Some DFA lands along the western margins of the VCIP Plan Area are located within areas where high sensitivity Pleistocene and Plio-Pleistocene deposits are exposed at the ground surface. The following mitigation measures apply to VCIP projects on these lands: <ul style="list-style-type: none"> i) <u>Prepare Paleontological Resource Management Plan (PRMP).</u> Prior to the commencement of ground-disturbing activities (i.e., during construction or decommissioning), the Qualified Paleontologist shall prepare a PRMP for the project. The PRMP shall, based upon the site-specific characteristics applicable to each project, establish field reconnaissance methodology; paleontological monitoring procedures; communication protocols to be followed if an unanticipated fossil discovery is made during project development; and preparation, curation, and reporting requirements. ii) <u>Construction/Decommissioning Monitoring.</u> As recommended by the PRMP, full-time monitoring shall be required during ground-disturbing activities, including visual inspection of excavated or graded areas and trench sidewalls for evidence of fossils. If a paleontological resource is discovered, the monitor shall divert the construction equipment around the find temporarily until it is assessed for scientific significance and collected and the steps described in "a.iii" above shall be implemented. Monitoring efforts can be reduced or eliminated at the discretion of the Qualified Paleontologist if no fossil resources are encountered after initiation of ground disturbing activity. <p>[Continued on next page.]</p>

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

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
4.7. GEOLOGY AND SOILS (CONT'D)	
GEO-9. Loss of Paleontological Resources (Cont'd)	
<u>VCIP Energy Resource and Infrastructure Plans (Cont'd)</u>	<p>[Continued from preceding page.]</p> <p>c. <u>Additional Mitigation Measures Applicable Only to Lands with Low Paleontological Sensitivity.</u> Most of the lands within the VCIP Plan Area are in low sensitivity Holocene-era fan and basin deposits which are underlain by high sensitivity older Pleistocene deposits at depths of at least 5 feet below the ground surface. The following additional mitigation measures apply to VCIP projects on these lands:</p> <p>i) <u>Spot Checking and Construction/Decommissioning Monitoring.</u> Within these areas, excavations of 5 feet or deeper shall be initially spot checked to determine whether excavations will disturb older alluvial deposits where scientifically important fossils may be present. In the event that paleontologically sensitive sediments are observed, full-time monitoring shall be initially implemented for excavations which extend to the depth of the older alluvial deposits. Ground disturbing activity that does not exceed 5 feet in depth shall not require paleontological spot-checking or monitoring. If it is determined that only sediments that are not conducive to fossil preservation would be disturbed by excavation, the monitoring program should be reduced or suspended as recommended by the Qualified Paleontologist. In the event of a fossil discovery, the steps prescribed in "a.iii" above shall be implemented.</p> <p>Significance after Mitigation: Less-than-Significant Impact.</p>
4.8. GREENHOUSE GAS EMISSIONS	
GHG-1. Greenhouse Gas Emissions	
<p><u>VCIP Energy Resource and Infrastructure Plans.</u> Implementation of the VCIP Energy Resource and Infrastructure Plans would result in the generation of greenhouse gas emissions, both directly and indirectly, during construction, operation, and decommissioning. However, the GHG emissions resulting from VCIP implementation would be vastly outweighed by the GHG emission reductions and substantial net benefit related to global climate change resulting from the clean power generation and storage provided by VCIP solar and energy storage projects.</p> <p>(Less-than-Significant Impact)</p>	No mitigation is required.

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

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
4.8. GREENHOUSE GAS EMISSIONS (CONT'D)	
GHG-2. Conflict with GHG Reduction Plans	
<u>VCIP Energy Resource and Infrastructure Plans.</u> Implementation of the VCIP Energy Resource and Infrastructure Plans would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs. <i>(No Impact)</i>	No mitigation is required.
4.9. HAZARDS AND HAZARDOUS MATERIALS	
HAZ-1. Potential Hazard from Routine Transport, Use, or Disposal of Hazardous Materials	
<u>VCIP Energy Resource and Infrastructure Plans.</u> Hazardous materials could be released during construction, operation, and decommissioning of the VCIP facilities. Potential hazards would be reduced to less-than-significant levels through compliance with applicable laws, regulations, and other requirements governing the transport, handling, use, storage, and disposal of hazardous materials. <i>(Less-than-Significant Impact)</i>	No mitigation is required.
HAZ-2. Hazards Related to Battery Energy Storage Systems (BESS)	
<u>VCIP Energy Resource and Infrastructure Plans.</u> Installation and operation of BESS in VCIP projects would potentially result in health, safety, and environmental hazards. These hazards can largely be avoided or reduced to a level that is less than significant through compliance with the codes and standards specific to BESS facilities; however, additional mitigation measures may be applicable at the project level to address site-specific conditions. <i>(Less-than-Significant Impact with Mitigation)</i>	<p><u>MM HAZ-1: Hazards Associated with BESS</u></p> <p>To ensure that potential health, safety, and environmental hazards associated with the operation of Battery Energy Storage Systems under the VCIP are avoided or reduced to less than significant, the following measures are applicable at the project level:</p> <p>1) <u>Code Compliance in Facility Planning and Design:</u> All BESS systems and components shall be designed and constructed in accordance with the most up-to-date applicable provisions of the California Fire Code, as supplemented and amended by the Fresno County Fire Code, and administered by the Fresno County Fire Protection District (FCFPD).</p> <p><i>[Continued on next page.]</i></p>

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

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
4.9. HAZARDS AND HAZARDOUS MATERIALS (CONT'D)	
HAZ-2. Hazards Related to Battery Energy Storage Systems (BESS) (Cont'd)	
<u>VCIP Energy Resource and Infrastructure Plans (Cont'd)</u>	<p>[Continued from preceding page.]</p> <p>2) <u>Coordinate with FCFPD (and other relevant local agencies) in Facility Planning and Design:</u> In the early stages of facility planning and design, the project proponent shall coordinate with the FCFPD (and other relevant local agencies) on the details of facility design, taking into account climatic and environmental conditions and proximity to sensitive receptors, and incorporating lessons learned from previous incidents involving BESS. Depending on site location and local conditions, this coordination shall inform decisions on the need for setbacks or perimeter walls, the design of fire suppression systems including minimum volume of water storage and minimum water pressure for fire suppression, emergency vehicle access, among other facility design considerations for reduction of potential hazards to health and safety to less than significant.</p> <p>3) <u>Coordination with FCFPD (and other relevant local agencies) in Preparing Emergency Preparedness and Response Plans:</u> In accordance with CPUC GO 167-C, the project proponent shall establish and implement Maintenance and Operation Standards for Energy Storage Systems, and Emergency Response and Emergency Action Plans for Energy Storage Systems. The project proponent shall coordinate with FCFPD (and other relevant local agencies) in the preparation and implementation of these objective standards and associated plans. For installation and maintenance, the plans shall include provisions to ensure proper installation, regular inspections, real-time monitoring systems to identify any defects, and malfunctioning systems to prevent potential failures that could result in fire incidents. For emergency response, the plans shall include provisions for the establishment of proactive and effective communication links, sharing of technical knowledge unique to BESS technology and safety issues, and regular training and education programs specific to potential BESS safety and incident response. In addition to the required elements of the Emergency Response and Action Plans, the Plans shall include the following provisions: 1) the Plans shall be submitted to the District and FCFPD no less than 60 days prior to construction; and 2) the project owner/operator shall notify the District and FCFPD within one hour, after it is safe and feasible, of specified incidents, such as activation of onsite emergency fire suppression system equipment to combat fire.</p> <p>[Continued on next page.]</p>

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

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
4.9. HAZARDS AND HAZARDOUS MATERIALS (CONT'D)	
HAZ-2. Hazards Related to Battery Energy Storage Systems (BESS) (Cont'd)	
<u>VCIP Energy Resource and Infrastructure Plans (Cont'd)</u>	<p>[Continued from preceding page.]</p> <p>4) <u>Post-Fire Environmental Monitoring</u>. The project proponent shall develop an air quality and water quality sampling plan to address potential container fires at the BESS. The plan shall include actions to implement so that appropriate air quality measurements can be taken immediately/automatically on-site during a fire and off-site measurements can be taken in real time to identify areas that are affected by smoke from the fire vs. areas that are not affected by the smoke plume from the fire. The project proponent shall have a contract in place (as part of the sampling plan) with an air testing company (or the local Air District) that can respond within hours to collect air samples from a thermal runaway event. The project proponent shall submit the proposed sampling plan to the District and FCFPD 45 days prior to proposed BESS operations for review, revisions, and approval prior to BESS operations. In the event of a fire incident at a BESS facility, the FCFPD shall immediately request that the U.S. EPA and SJVAPCD conduct continuous air quality monitoring during and after the fire incident, and shall request that DTSC and Fresno County Environmental Health conduct surface water, soil, and drinking water sampling and testing for the presence of contaminants in actionable concentrations. Based on the results of the testing for contaminants, the health and safety agencies shall issue public health advisories and clean-up orders as appropriate.</p> <p>Significance after Mitigation: Less-than-Significant Impact.</p>
HAZ-3. Hazards Related to Past and Present Agricultural Operations	
<p><u>VCIP Energy Resource and Infrastructure Plans</u>. The ground disturbing activities associated with implementation of the VCIP Energy Resource and Infrastructure Plans pose potential environmental health hazards by mobilizing petroleum products and agricultural chemicals that may be present in the soil. Any potential hazards would be addressed by environmental assessments and completion of any required remediation for each project site prior to development.</p> <p>(Less-than-Significant Impact with Mitigation)</p>	<p>MM HAZ-2: Complete Phase I Environmental Site Assessment</p> <p>Phase I ESAs shall be completed by project proponents of individual projects in the VCIP Plan Area. The Phase I ESAs shall be performed in conformance with the scope and limitations of ASTM E 1527-13 "Standard Practice for Environmental Site Assessments" and EPA "Standards and Practices for All Appropriate Inquiries," 40 CFR Part 312. If potential hazardous materials contamination is identified in a project Phase I ESA, and the Phase I ESA recommends further review, the project proponent shall retain a Registered Environmental Assessor or other qualified professional to conduct follow-up sampling to characterize the contamination and to identify any required remediation that shall be conducted. These recommendations shall be implemented, and the site shall be deemed remediated by the appropriate agency (DTSC, Fresno County Department of Environmental Health Services [FCDEHS]).</p> <p>Significance after Mitigation: Less-than-Significant Impact.</p>

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

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
4.9. HAZARDS AND HAZARDOUS MATERIALS (CONT'D)	
HAZ-4. Worker Exposure to Valley Fever Fungal Spores	
<p>VCIP Energy Resource and Infrastructure Plans. The soils of the VCIP 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. Implementation of Dust Control Plans, worker awareness training, and respiratory protection programs, as required by existing laws and regulations, would avoid or substantially reduce the health risk to construction workers from potential exposure to Valley Fever during implementation of the VCIP Energy Resource and Infrastructure Plans. <i>(Less-than-Significant Impact)</i></p>	<p>No mitigation is required.</p>
HAZ-5. Hazards from Abandoned Oil and Gas Wells	
<p>VCIP Energy Resource and Infrastructure Plans. The former oil and gas wells within the VCIP Plan Area pose a risk of potential groundwater contamination and a risk that toxic gases would be released at the well sites which would pose a potential hazard to the public and the environment. Compliance with all applicable regulatory requirements and preparation of soil and groundwater contamination studies, and site remediation if necessary, would avoid or substantially reduce the potential hazard to the public and the environment. <i>(Less-than-Significant Impact with Mitigation)</i></p>	<p>Implement MM HAZ-2 (Complete Phase I Environmental Site Assessment).</p> <p>Significance after Mitigation: Less-than-Significant Impact.</p>
HAZ-6. Safety Hazards Associated with Existing Natural Gas	
Pipelines and Power Transmission Lines	
<p>VCIP Energy Resource and Infrastructure Plans. The existing natural gas and petroleum pipelines and electrical transmission lines that are present within the VCIP Plan Area may pose safety hazards to construction activities in proximity to those facilities. Compliance with existing regulations and safety protocols would avoid or substantially reduce these risks. <i>(Less-than-Significant Impact)</i></p>	<p>No mitigation is required.</p>

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

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
4.9. HAZARDS AND HAZARDOUS MATERIALS (CONT'D)	
HAZ-7. Hazards or Hazardous Materials within ¼ Mile of Schools	
<p><u>VCIP Energy Resource and Infrastructure Plans.</u> One elementary school is located within one-quarter mile of a potential VCIP Development Focus Area where a solar PV generating facility and/or energy storage facility would be constructed. Compliance with existing laws, regulations, codes, protocols, and standards required during construction and operation of the VCIP solar and energy storage facilities would ensure that hazardous materials used at VCIP project sites are transported, handled, stored, and disposed of in a manner that would avoid or substantially reduce the risk of release of hazardous materials. <i>(Less-than-Significant Impact)</i></p>	<p>No mitigation is required.</p>
HAZ-8. Any Listed Hazardous Materials Sites on or Near Plan Area	
<p><u>VCIP Energy Resource and Infrastructure Plans.</u> Upon the cleanup and regulatory closure of the two contamination sites within and adjacent to the proposed VCIP DFAs, there would be no contamination sites within the VCIP development areas that would create a significant hazard to the public or the environment. <i>(Less-than-Significant Impact with Mitigation)</i></p>	<p><u>Implement MM HAZ-2 (Complete Phase I Environmental Site Assessment).</u></p> <p>Significance after Mitigation: Less-than-Significant Impact.</p>
HAZ-9. Electromagnetic Fields (EMFs) from Electrical Facilities	
<p><u>VCIP Energy Resource and Infrastructure Plans.</u> Residents and workers in the vicinity of the planned VCIP transmission lines, gen-tie lines, and substations could be exposed to Electromagnetic Fields (EMFs) emitted by those facilities. These infrastructure facilities therefore are planned to be routed, located, and designed in a manner to ensure that the nearest residents and workers would not be exposed to long-term EMF levels any greater than existing ambient or background levels. <i>(Less-than-Significant Impact with Mitigation)</i></p>	<p><u>MM HAZ-3: EMF Setbacks</u></p> <p>To ensure that EMF levels from VCIP infrastructure do not exceed ambient EMF levels at sensitive receptor locations, the following setback distances are applicable at the project-specific stage:</p> <ol style="list-style-type: none"> 1) For 230-kV gen-tie lines and transmission lines, the edge of the right-of-way shall be set back a minimum distance of 150 feet from the nearest residential property line. 2) For 500-kV transmission lines, the edge of the transmission right-of-way shall be set back a minimum distance of 350 feet from the nearest residential property line. 3) For 230-kV project substations, the exterior fence line of the substation shall be set back a minimum distance of 150 feet from the nearest residential property line. 4) For 500-kV collection substations, the exterior fence line of the substation shall be set back a minimum distance of 350 feet from the nearest residential property line. <p>Significance after Mitigation: Less-than-Significant Impact.</p>

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

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
4.9. HAZARDS AND HAZARDOUS MATERIALS (CONT'D)	
HAZ-10. Photovoltaic Heat Island Effects	
<u>VCIP Energy Resource and Infrastructure Plans.</u> Air temperatures at the VCIP solar facilities could increase due to the potential heat island effects of solar PV arrays. The best available scientific information indicates, however, that any potential increases in air temperature would be insubstantial and would dissipate within short distances from the solar facilities. <i>(Less-than-Significant Impact)</i>	No mitigation is required.
HAZ-11. Hazards to Aviation due to Physical Features and Reflective Surfaces	
<u>VCIP Energy Resource and Infrastructure Plans.</u> Tall physical features could pose a hazard to aircraft operation due to physical obstruction. No proposed VCIP structures would be tall enough to present a physical obstruction to aviation. The glare from reflective surfaces can be a hazard to aviation, but solar PV modules are dark in color and have low reflectivity and have not been shown to pose a hazard to aviation. <i>(Less-than-Significant Impact)</i>	No mitigation is required.
HAZ-12. Impair or Interfere with Emergency Response or Evacuation	
<u>VCIP Energy Resource and Infrastructure Plans.</u> Implementation of the VCIP Energy Resource and Infrastructure Plans would not impair implementation of or physically interfere with an adopted emergency response plan or an emergency evacuation plan. <i>(Less-than-Significant Impact)</i>	No mitigation is required.

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

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
4.10. HYDROLOGY AND WATER QUALITY	
HYD-1. Violate Water Quality Standards or Waste Discharge Permits	
<u>VCIP Energy Resource and Infrastructure Plans.</u> Implementation of the VCIP Energy Resource and Infrastructure Plans would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality. <i>(Less-than-Significant Impact)</i>	No mitigation is required.
HYD-2. Effects on Groundwater Use and Sustainability	
<u>VCIP Energy Resource and Infrastructure Plans.</u> Implementation of the VCIP Energy Resource and Infrastructure Plans would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge or impede sustainable groundwater management of the basin. <i>(Less-than-Significant Impact)</i>	No mitigation is required.
HYD-3. Alteration of Drainage Patterns, Erosion, Stormwater,	Flooding
<u>VCIP Energy Resource and Infrastructure Plans.</u> Implementation of the VCIP Energy Resource and Infrastructure Plans would not substantially alter the existing drainage patterns of the Plan Area, would not add substantial impervious surfaces, and would not result in substantial erosion or siltation on or off the project sites, or substantially increase the rate or amount of surface runoff or flooding on or off the project sites, or contribute runoff which would exceed the capacity of stormwater systems, or result in substantial additional sources of polluted runoff, or impede or redirect flood flows. <i>(Less-than-Significant Impact with Mitigation)</i>	<p>MM HYD-1. Complete Hydrology Study</p> <p>A construction-level hydrology study shall be prepared for each VCIP project prior to grading and construction. The study shall be prepared by a qualified civil engineer who shall determine stormwater volumes and potential flood depths at the site and make recommendations for control of site drainage and avoidance or mitigation of potential flooding impacts. These may include recommendations for construction of detention basins to capture any overland stormwater flows to prevent stormwater runoff from leaving the project site, and raising project elements above calculated flood elevations. The recommendations of the hydrology study shall be incorporated into the project construction plans.</p> <p>Significance after Mitigation: Less-than-Significant Impact.</p>
HYD-4. Release of Pollutants due to Flooding, Tsunami, Seiches	
<u>VCIP Energy Resource and Infrastructure Plans.</u> Implementation of the VCIP Energy Resource and Infrastructure Plans would involve little or no risk of release of pollutants due to inundation of the VCIP Plan Area from flood hazard or inundation due to dam failure, tsunami, or seiches. <i>(Less-than-Significant Impact)</i>	No mitigation is required.

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

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
4.10. HYDROLOGY AND WATER QUALITY (CONT'D)	
HYD-5. Conflict with Water Quality Plan or Sustainable	Groundwater Management Plan
<u>VCIP Energy Resource and Infrastructure Plans.</u> Implementation of the VCIP Energy Resource and Infrastructure Plans would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. (No Impact)	No mitigation is required.
4.11. LAND USE AND PLANNING	
LU-1. Physically Divide an Established Community	
<u>VCIP Energy Resource and Infrastructure Plans.</u> Implementation of the VCIP Energy Resource and Infrastructure Plans would not physically divide an established community. (No Impact)	No mitigation is required.
LU-2. Conflict with any Adopted Land Use Plan, Policy, or Regulation	
<u>VCIP Energy Resource and Infrastructure Plans.</u> Implementation of the VCIP Energy Resource and Infrastructure Plans would not physically divide an established community. (No Impact)	No mitigation is required.
4.12. MINERAL RESOURCES	
MIN-1. Loss of Availability of Known Mineral Resources	
<u>VCIP Energy Resource and Infrastructure Plans.</u> Implementation of the VCIP Energy Resource and Infrastructure Plans would not cause loss of availability of a known mineral resource that would be of value to the region and the residents of the state. (Less-than-Significant Impact)	No mitigation is required.
MIN-2. Loss of Availability of a Locally Important Mineral Resource	Recovery Site
<u>VCIP Energy Resource and Infrastructure Plans.</u> Implementation of the VCIP Energy Resource and Infrastructure Plans would not cause a loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan. (Less-than-Significant Impact)	No mitigation is required.

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

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
4.13. NOISE	
NOI-1. Substantial Increase in Ambient Noise Levels	
<p>VCIP Energy Resource and Infrastructure Plans. Implementation of the VCIP Energy Resource and Infrastructure Plans could result in substantial temporary or permanent increase in ambient noise levels in excess of applicable noise standards; however, noise levels would be reduced to less-than-significant through specified noise mitigation measures to be applied at the project-specific level. (Less-than-Significant Impact with Mitigation)</p>	<p>MM NOI-1a. Noise Mitigation for Project Construction and Decommissioning To reduce potential construction and decommissioning noise impacts resulting from VCIP implementation, the following mitigation measures are identified for application at the project-specific level, with applicability depending on the individual circumstances of each project, as follows:</p> <ol style="list-style-type: none"> 1) Implement Mitigation Measure TR-1. Mitigation Measure TR-1 specifies traffic volume reduction measures that would ensure that project traffic does not reduce Level of Service below LOS C on any roadways providing construction routes to VCIP projects. 2) Within the roadway segment of South San Mateo Avenue between West Carlson Avenue and West Conejo Avenue, no through-traffic for VCIP project construction or decommissioning shall be permitted on this roadway segment to maintain average daily noise at levels no greater than 3 dBA Ldn above ambient levels at the existing residences along this roadway segment. This measure shall be implemented and enforced in accordance with the traffic and truck routing plan prepared pursuant to Mitigation Measure TR-3. 3) Within the roadway segment of West Clarkson Avenue between South Stanislaus Avenue and South San Mateo Avenue no delivery truck or equipment traffic shall be permitted on this roadway segment in order to minimize traffic noise at the Cantua Elementary School and community. This measure shall be implemented and enforced in accordance with the traffic and truck routing plan prepared pursuant to Mitigation Measure TR-3. 4) Acoustical studies shall be required to be prepared for each VCIP project. These studies shall establish baseline noise levels and evaluate estimated project traffic distribution to calculate noise level increases due to project traffic, and also identify any additional traffic reductions required to maintain construction and decommissioning noise level increases to 5 dBA Ldn or less where noise levels with the project would remain below dBA Ldn, 3 dBA Ldn or less where noise levels with the project would range from 60 to 65 dBA Ldn, and 1.5 dBA Ldn or less where noise levels with the project would exceed 65 dBA Ldn. <p>Significance after Mitigation: Less-than-Significant Impact. [Continued on next page.]</p>

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

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
4.13. NOISE (CONT'D)	
NOI-1. Substantial Increase in Ambient Noise Levels (Cont'd)	
<u>VCIP Energy Resource and Infrastructure Plans (Cont'd)</u>	<p>MM NOI-1b. Noise Mitigation for Project Operation</p> <p>To reduce potential operational noise impacts resulting from VCIP implementation, the following mitigation measures are identified for application at the project-specific level, with applicability depending on the individual circumstances of each project, as follows:</p> <ol style="list-style-type: none"> 1) Noise generating equipment at each energy resource and infrastructure project site shall be located at the following setback distances from the nearest noise-sensitive land uses unless an acoustical analysis identifies feasible mitigation (defined below) to reduce noise produced by the equipment to 50 dBA L₅₀ at the location of any noise-sensitive land use: <ol style="list-style-type: none"> a. Power Conversion Stations (PCSs): 60 feet from nearest receptor. b. Battery Energy Storage System (BESS) with electrically powered HVAC system: 400 feet from nearest receptor. c. Battery Energy Storage System (BESS) with water cooling system: 65 feet from nearest receptor. d. Project Substation: 225 feet from nearest receptor. 2) Collection substations shall not be located within 400 feet of noise-sensitive land uses unless an acoustical analysis identifies feasible mitigation to reduce noise produced by collection substations to 50 dBA L₅₀ at the location of any noise-sensitive land use. <p>Feasible mitigation would include, but not be limited to, noise barriers which shield project noise sources from nearby sensitive land uses and selection of quieter equipment. A noise barrier that interrupts the line-of-site between the noise source and receptor would achieve a minimum 5 dBA reduction in noise. The use of noise barriers would reduce but not eliminate the minimum setback distances identified above, so some setback distance would likely still be required to meet the 50 dBA L₅₀ noise limit. The acoustical studies required for each VCIP project would determine the combination of shielding and setback that would be appropriate for the proposed equipment and feasible in each case to meet the applicable noise standard.</p> <p>Significance after Mitigation: Less-than-Significant Impact.</p>

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

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
4.13. NOISE (CONT'D)	
NOI-2. Vibration	
<p>VCIP Energy Resource and Infrastructure Plans. Implementation of the VCIP Energy Resource and Infrastructure Plans could result in generation of excessive groundborne vibration; however, vibration levels would be reduced to less-than-significant through application of specified vibration mitigation measures at the project-specific level. <i>(Less-than-Significant Impact with Mitigation)</i></p>	<p>MM NOI-2. Vibration Mitigation for Project Construction</p> <p>To reduce potential construction vibration impacts and annoyance to residents resulting from VCIP implementation, (i.e., to maintain vibration levels at less than 0.1 PPV at buildings and sensitive receptors), the following vibration mitigation measures are identified for application at the project-specific level, with applicability depending on the individual circumstances of each project, as follows:</p> <ol style="list-style-type: none"> 1) Avoid using sonic pile drivers, vibratory rollers, or dropping heavy equipment (e.g., clam shovel drops) within 50 feet of adjacent buildings. 2) Avoid using hoe rams, bulldozers, or drills within 25 feet of adjacent buildings. 3) Substitute smaller equipment to complete the tasks designated for vibratory equipment within 50 feet of sensitive receptors. 4) Provide construction notification. Notice shall be mailed no less than 15 days prior to construction to all residents, property owners, businesses, and public agencies that have facilities within 500 feet of the project area. The notice shall state the type of construction activities that will be conducted, the location and duration of construction, and contact information for the project Disturbance Coordinator. 5) Designate a Disturbance Coordinator responsible for registering and investigating claims of excessive vibration. The contact information for the Disturbance Coordinator shall be posted on the construction site. <p>Significance after Mitigation: Less-than-Significant Impact.</p>
NOI-3. Exposure to Aircraft	
<p>VCIP Energy Resource and Infrastructure Plans. Implementation of the VCIP Energy Resource and Infrastructure Plans would not result in exposure of workers at VCIP project sites to excessive noise levels from aircraft operations at airports or airstrips in the vicinity. <i>(Less-than-Significant Impact)</i></p>	<p>No mitigation is required.</p>

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

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
4.14. POPULATION AND HOUSING	
PH-1. Induce Substantial Unplanned Population Growth in the Area	
<u>VCIP Energy Resource and Infrastructure Plans.</u> Implementation of the VCIP Energy Resource and Infrastructure Plans would not induce substantial unplanned population growth in the area, either directly or indirectly. <i>(Less-than-Significant Impact)</i>	No mitigation is required.
PH-2. Displace Substantial Numbers of Existing People or Housing	
<u>VCIP Energy Resource and Infrastructure Plans.</u> Implementation of the VCIP Energy Resource and Infrastructure Plans would not displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere. <i>(Less-than-Significant Impact)</i>	No mitigation is required.
4.15. PUBLIC SERVICES	
PS-1. Fire Protection Services	
<u>VCIP Energy Resource and Infrastructure Plans.</u> Implementation of the VCIP Energy Resource and Infrastructure Plans would result in an incremental increase in demand for fire protection services, which is expected to be insubstantial. To the extent this increase could be substantial and thus could result in degradation of service levels or in the need for new or expanded facilities, the impact would be reduced to less-than-significant through mitigation at the project-specific level. <i>(Less-than-Significant Impact with Mitigation)</i>	<u>MM PS-1. Fire Protection Mitigation</u> Prior to the issuance of building permits for each solar and BESS project to be constructed under the VCIP, the project proponent and the FCFPD shall enter into an agreement regarding funding of FCFPD services, if applicable, in the absence of increased property tax revenues generated by the project sufficient to cover the demonstrated cost of providing service to the project. The amount of funding to be provided by each project, if any, shall be supported by a financial analysis which establishes the requisite nexus and provides substantial evidence that the calculated funding amount bears a reasonable relationship (i.e., is roughly proportional) to the cost of FCFPD services to be provided to the project. Significance after Mitigation: Less-than-Significant Impact.
PS-2. Law Enforcement and Security	
<u>VCIP Energy Resource and Infrastructure Plans.</u> Implementation of the VCIP Energy Resource and Infrastructure Plans would result in an incremental increase in demand for law enforcement services; however, this increase is expected to be insubstantial and therefore would not degrade service levels or result in the need for new or altered law enforcement facilities. <i>(No Impact)</i>	No mitigation is required.

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

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
4.15. PUBLIC SERVICES (CONT'D)	
PS-3. Schools, Parks, and Other Public Facilities	
VCIP Energy Resource and Infrastructure Plans. Implementation of the VCIP Energy Resource and Infrastructure Plans would result in no demand for schools, parks, or other public facilities, and therefore would not degrade service levels or result in the need for new or altered schools, parks, or other public facilities. (No Impact)	No mitigation is required.
4.16. TRANSPORTATION	
TR-1. Conflict with a Transportation Program, Plan, Ordinance	Policy
VCIP Energy Resource and Infrastructure Plans. Implementation of the VCIP Energy Resource and Infrastructure Plans would potentially result in temporary conflicts with Level of Service policies applicable to area highways and roads during VCIP project construction; however, traffic management measures would reduce the potential impacts to less than significant. (Less-than-Significant Impact with Mitigation)	<p>MM TR-1. Traffic LOS Mitigation for Project Construction and Decommissioning</p> <p>To reduce potential construction traffic LOS impacts resulting from VCIP implementation, the following traffic mitigation measures are identified for application at the project stage, with applicability depending on the individual circumstances of each project, as follows:</p> <ol style="list-style-type: none"> 1) Prior to the start of construction (and decommissioning), the project proponent shall submit a Construction Traffic Management Plan (Plan) to the approving agency for review and approval. The Plan shall be supported by a Traffic Impact and Mitigation Report (Report) which demonstrates that the measures proposed in the Plan would maintain the Level of Service (LOS) on all roadways and intersections affected by project construction/decommissioning traffic to LOS C or better. The mitigation measures in the Plan shall include the following measures. <ol style="list-style-type: none"> a. Provide shuttle bus service for commuting construction/decommissioning workers from population centers (e.g., Fresno metro area) to and from VCIP construction sites. <p>Mitigation shall consist solely of shuttle bus service, as specified in 'a', since shuttle bus service would demonstrably mitigate LOS impacts. However, if additional mitigations, such as those listed 'b' through 'e' below, can be quantitatively demonstrated to achieve the applicable LOS standards, then consideration can be given to implementation of a combination of mitigation measures, consisting of 'a,' at a minimum, and some combination of 'b' through 'e' below, or their functional equivalents. <i>[Continued on next page.]</i></p>

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

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
4.16. TRANSPORTATION (CONT'D)	
TR-1. Conflict with a Transportation Program, Plan, Ordinance	Policy (Cont'd)
<u>VCIP Energy Resource and Infrastructure Plans (Cont'd)</u>	<p><i>[Continued from preceding page.]</i></p> <ul style="list-style-type: none"> b. Provide ridesharing information and matching service to facilitate carpooling or vanpooling, particularly for construction/decommissioning workers commuting from more remote areas where shuttle bus service may not be made available. c. Schedule daily construction/decommissioning activity so that start and finish times are staggered to reduce concentration of worker traffic particularly during the peak periods of existing traffic on affected roadways. d. Actively encourage the use of mobile phone applications that provide information on real-time traffic conditions to identify alternative travel routes for construction/decommissioning workers and delivery trucks to reduce traffic volumes on the main travel routes to the VCIP project sites. e. Limit truck deliveries of equipment and materials to non-peak traffic periods (e.g., avoid unnecessary travel from 5 to 8 AM and 3 to 6 PM). <p>2) In cases where other VCIP projects are planned to be constructed/decommissioned in the vicinity of the proposed project, and whose construction/decommissioning schedules overlap with the proposed project construction/decommissioning schedule, the Report shall include a report on coordination of traffic mitigation efforts by the proponents of the concurrent projects, and shall include analysis which demonstrates that the combined construction/decommissioning traffic impacts on any affected roadways and intersections would be fully mitigated so as not to result in collective degradation of service levels below LOS C. The Report shall also include a detailed summary of specific fair share mitigation measures to be implemented by each concurrent project (e.g., number of shuttle buses required for each project). Alternative approaches for implementing mitigations for collective traffic LOS impacts may be partially substituted for the recommended approach provided that it is quantitatively demonstrated in project-specific documents approved by the approving agency that the alternative approach results in maintenance of LOS C or better on all affected roadways. To coordinate the traffic studies involving multiple projects, the District or its designee shall establish a management entity to provide such coordination as needed, and to monitor the effectiveness of the planned mitigation measures.</p> <p>Significance after Mitigation: Less-than-Significant Impact.</p>

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

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
4.16. TRANSPORTATION (CONT'D)	
TR-2. Conflict with CEQA Guidelines Section 15064.3, Subdivision (b) (VMT)	
<p>VCIP Energy Resource and Infrastructure Plans. Implementation of the VCIP Energy Resource and Infrastructure Plans would not conflict with the applicable VMT reduction requirements established under CEQA Guidelines section 15064.3(b). <i>(Less-than-Significant Impact with Mitigation)</i></p>	<p>Mitigation Measures: Implement MM TR-1 (LOS Policy)</p>
TR-3. Substantially Increase Transportation Hazards	
<p>VCIP Energy Resource and Infrastructure Plans. Implementation of the VCIP Energy Resource and Infrastructure Plans would potentially result in traffic hazards during project construction and decommissioning; however, traffic hazards would be reduced to less-than-significant through specified traffic safety measures to be applied at the project level. <i>(Less-than-Significant Impact with Mitigation)</i></p>	<p>MM TR-2: Traffic Safety Measures for VCIP Project Construction and Decommissioning To reduce potential construction traffic safety impacts during the construction and decommissioning phases of VCIP implementation, the following traffic safety measures are identified for application at the project stage, with applicability depending on the individual circumstances of each project, as follows:</p> <ol style="list-style-type: none"> 1) Prior to the issuance of construction or building permits and the issuance decommissioning authorizations, the project proponent shall submit a Traffic Safety Plan to the approving agency, Caltrans District 6 for review and approval. The Traffic Safety Plan shall be prepared in accordance with both the Caltrans Manual on Uniform Traffic Control Devices and Caltrans Construction Manual and must include, but not be limited to, the following elements: <ol style="list-style-type: none"> a. Prepare Temporary Traffic Control (TTC) plan that addresses traffic safety and control through the work zone, including during temporary lane closures (if needed) to accommodate materials delivery, transmission line stringing activities, or any other utility connections; b. Identify the timing of deliveries of heavy equipment and building materials; c. Designate construction staff to be assigned as flaggers to direct traffic into and/or through temporary traffic control zones, as needed; d. Place temporary signage, lighting, and traffic control devices, including, but not limited to, appropriate signage along access routes to indicate the presence of heavy vehicles and construction traffic; <p>[Continued on next page.]</p>

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

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
4.16. TRANSPORTATION/TRAFFIC (CONT'D)	
TR-3. Increased Traffic Hazards (Cont'd)	
<u>VCIP Energy Resource and Infrastructure Plans (Cont'd)</u>	<p>[Continued from preceding page.]</p> <ul style="list-style-type: none"> e. Ensure access for emergency vehicles to the project site; f. Maintain access to adjacent properties; g. Identify approved truck routes for the transport of all construction equipment and materials, and avoid truck travel through residential areas (e.g., Cantua Creek), to the extent feasible; h. Obtain all necessary encroachment permits from Fresno County and Caltrans for the work within the road rights-of-way; i. Obtain permits from Fresno County and Caltrans for oversized/overweight vehicles which may require California Highway Patrol or a pilot car escort. <p>Significance after Mitigation: Less-than-Significant Impact.</p> <hr/> <p><u>MM TR-3: Road Condition Survey and Repair Requirements</u></p> <p>To address any pavement damage resulting from heavy truck traffic during construction and decommissioning of potential VCIP projects, the following mitigation measures are identified for application at the project stage, with applicability depending on the individual circumstances of each project, as follows:</p> <ol style="list-style-type: none"> 1) <u>Road Condition Survey</u>. Prior to the issuance of permits and authorizations for project construction and decommissioning, respectively, a preconstruction report and a pre-decommissioning report shall be prepared by a qualified registered engineer, retained by the project proponent, to include a detailed analysis of road suitability to accommodate haul trucks during project construction and decommissioning. The reports shall be submitted to the Fresno County Department of Public Works and Planning. Prior to initiating the preconstruction or pre-decommissioning report, the proposed methodology shall be presented to the Fresno County Department of Public Works and Planning for review and approval. Based on the findings of the reports, the project may be required to make improvements to existing roads prior to construction and/or decommissioning. <p>[Continued on next page.]</p>

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

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
4.16. TRANSPORTATION/TRAFFIC (CONT'D)	
TR-4. Increased Traffic Hazards (Cont'd)	
<u>VCIP Energy Resource and Infrastructure Plans (Cont'd)</u>	<p>[Continued from preceding page.]</p> <p>2) <u>Road Repair Agreement</u>. Prior to the issuance of permits and authorizations for project construction and decommissioning, the project proponent shall enter into a secured agreement with Fresno County to ensure that the project contributes its fair-share portion toward repairs of County roads and/or State highways that are demonstrably damaged by the project. The extent of roadway impacts shall be determined in consultation with Fresno County and/or Caltrans District 6, as applicable. Subject to the discretion of the County of Fresno and Caltrans District 6, roadway impacts shall be mitigated either by construction of an overlay, reconstruction of the pavement section, or by participating financially for the costs of the mitigation to the extent of the project's fair share.</p> <p>Significance after Mitigation: Less-than-Significant Impact.</p>
TR-4. Result in Inadequate Emergency Access	
<u>VCIP Energy Resource and Infrastructure Plans</u> . Implementation of the VCIP Energy Resource and Infrastructure Plans would not result in inadequate emergency access. (Less-than-Significant Impact)	No mitigation is required.
4.17. UTILITIES AND SERVICE SYSTEMS	
UTS-1. Relocation or Construction of New or Expanded Utility	Systems
<u>VCIP Energy Resource and Infrastructure Plans</u> . Implementation of the VCIP Energy Resource and Infrastructure Plans would not require or result in the relocation or construction of new or expanded facilities for water, wastewater treatment facilities or stormwater drainage, electric power, natural gas, or telecommunications, the construction or relocation of which could cause significant environmental effects; therefore, the impact would be <i>less-than-significant</i> . (Less-than-Significant Impact)	No mitigation is required.

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

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
4.17. UTILITIES AND SERVICE SYSTEMS (CONT'D)	
UTS-2. Sufficient Water Supplies to Serve the Project	
VCIP Energy Resource and Infrastructure Plans. There are sufficient water supplies available to serve the implementation of the VCIP Energy Resource and Infrastructure Plans during normal, dry and multiple dry years during a 20-year projection, in addition to existing and reasonably foreseeable future uses; therefore, the impact would be <i>less-than-significant</i> . (<i>Less-than-Significant Impact</i>)	No mitigation is required.
UTS-3. Wastewater Treatment and Disposal	
VCIP Energy Resource and Infrastructure Plans. The VCIP solar and energy storage facilities would be served by individual septic systems, which would be located, designed, constructed, operated, and maintained in accordance with Fresno County and Regional Water Quality Control Board requirements and standards, such that potential impacts to wastewater treatment capacity would be less than significant. (<i>Less-than-Significant Impact</i>)	No mitigation is required.
UTS-4. Solid Waste Service and Landfill Capacity	
VCIP Energy Resource and Infrastructure Plans. The VCIP energy and infrastructure projects would not generate solid waste in excess of state or local standards, in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste goals. (<i>Less-than-Significant Impact</i>)	No mitigation is required.
UTS-5. Compliance with Solid Waste Laws and Regulations	
VCIP Energy Resource and Infrastructure Plans. The energy and infrastructure projects developed under the VCIP would comply with applicable laws and regulations related to the management and reduction of solid waste. (<i>Less-than-Significant Impact</i>)	No mitigation is required.

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

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
4.18. WILDFIRE	
WF-1. Risk of Wildfire and Related Effects	
VCIP Energy Resource and Infrastructure Plans. Implementation of the VCIP Energy Resource and Infrastructure Plans would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires. Compliance with all applicable regulations, codes, standards, and required fire safety measures during construction, operation, and decommissioning of VCIP clean energy and infrastructure projects, would provide a high degree of protection from wildfire risk. <i>(Less-than-Significant Impact)</i>	No mitigation is required.
WF-2. Impairment of Emergency Response or Evacuation Plans	
VCIP Energy Resource and Infrastructure Plans. Implementation of the VCIP Energy Resource and Infrastructure Plans would not substantially impair an adopted emergency response plan or emergency evacuation plan. <i>(Less-than-Significant Impact)</i>	No mitigation is required.
WF-3. Exacerbation of Wildfire Risk due to Slopes, Prevailing Winds, etc.	
VCIP Energy Resource and Infrastructure Plans. Implementation of the VCIP Energy Resource and Infrastructure Plans would not exacerbate fire risks due to slopes, prevailing winds, or other factors and thus would not expose project occupants to pollutants from wildfire or uncontrolled spread of wildfire. <i>(Less-than-Significant Impact)</i>	No mitigation is required.
WF-4. Exacerbation of Wildfire Risk due to Installation of Infrastructure	
VCIP Energy Resource and Infrastructure Plans. Implementation of the VCIP Energy Resource and Infrastructure Plans would not require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment. <i>(Less-than-Significant Impact)</i>	No mitigation is required.

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

POTENTIAL IMPACT	MITIGATION MEASURE (MM)
4.18. WILDFIRE (CONT'D)	
WF-5. Exposure of People or Structures to Post-Fire Flooding or	Landslides
<u>VCIP Energy Resource and Infrastructure Plans</u> . Implementation of the VCIP Energy Resource and Infrastructure Plans would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes. (Less-than-Significant Impact)	No mitigation is required.

1. INTRODUCTION

1.1. ENVIRONMENTAL REVIEW UNDER CEQA

1.1.1. PURPOSE OF THIS PEIR

This Programmatic Environmental Impact Report (PEIR) has been prepared by consultants on behalf of the Westlands Water District (District) as Lead Agency in conformance with the California Environmental Quality Act (CEQA) to inform the public, decision-makers, and other public agencies of the potential significant environmental impacts of the projects and plans that they propose to consider.

Valley Clean Infrastructure Plan (VCIP)

This PEIR assesses the potential environmental effects of adoption and long-term implementation of the proposed Valley Clean Infrastructure Plan (VCIP, Project, or Plan). The proposed VCIP would provide the policy and planning framework for the implementation of renewable energy projects within the Fresno County portion of the District's service area that would be located on private and District-owned lands within the identified Development Focus Areas (DFAs). Such projects would involve the development of clean energy generation, storage, transmission, and other ancillary and supportive uses. The District's authority to engage in clean energy development is provided by AB 2661 (2024), which also recognizes the VCIP as the planning framework for undertaking development of these facilities. AB 2661 recognizes the "unique need of the Westlands Water District to support the development of solar electrical generation for the electrical grid and to facilitate the development of transmission capacity to help California reach its clean energy and climate goals."

AB 2661 was approved on September 25, 2024, and is codified as Water Code sections 37860-37861. It specifically authorizes the District to: (1) provide, generate, and deliver solar photovoltaic electricity, and construct, operate, and maintain any and all works, facilities, improvements, and property, or portions thereof, necessary or convenient for generating and delivering that electricity; (2) construct, operate, and maintain an energy storage system, as defined in section 2835 of the Public Utilities Code, and all works, facilities, improvements, and property, or portions thereof, necessary or convenient for the operation of an energy storage system, within the boundaries of the District; and (3) construct, operate, and maintain electrical transmission lines and all works, facilities, improvements, and property, or portions thereof, necessary or convenient for the conveyance of electricity within the boundaries of the District. The bill also requires that the District establish a community benefits agreement plan for the VCIP and related projects, with specific benefits to include but not limited to: job creation and training programs for local residents, use of local businesses and vendors, and financial contributions to community development projects and programs (Wat. Code, section 37860(b)-(d)).

Sustainable Groundwater Management Act (SGMA)

In September 2014, Governor Brown signed the Sustainable Groundwater Management Act (SGMA). The goal of the legislation is to, among other things, provide for the "sustainable management" of California's groundwater basins (i.e., the management and use of groundwater in a manner that can be maintained during SGMA's planning and implementation horizon without causing specified "undesirable results") and to "enhance local management of groundwater." (Wat. Code, §§ 10720.1, 10721(v).) As the primary water

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purveyor in the Subbasin, the District is the designated Groundwater Sustainability Agency (GSA) for the Subbasin. DWR has designated the Subbasin as a critically overdrafted basin. The District, in cooperation with Fresno County, prepared the “Westside Subbasin Groundwater Sustainability Plan” (the GSP), which was adopted by both agencies in January 2020. The purpose of the GSP is to characterize groundwater conditions in the Subbasin, evaluate and report on conditions of overdraft, establish sustainability goals and sustainability management criteria, and describe projects and management actions the GSA intends to implement to achieve sustainability by 2040.

The 2025 Amendment to the GSP focuses on groundwater management actions that may be implemented by the GSA to achieve sustainability by 2040. GSP Project No. 6, “Agricultural Land Repurposing,” identifies the proposed VCIP and the District’s Strategic Plan as initiatives to promote groundwater sustainability in the Subbasin. The District’s Strategic Plan outlines key strategies to ensure the District achieves long-term groundwater sustainability, preserves economic opportunities for growers and the communities, and protects against undesirable results, such as subsidence. Regarding the proposed VCIP, the GSP provides: “The VCIP is an initiative that focuses on expanding clean and renewable energy infrastructure within California’s Central Valley. It aims to support the region’s transition to more sustainable energy sources while addressing environmental and economic challenges. . . . The VCIP seeks to align energy development with goals of sustainability and resilience, including the reduction of carbon emissions and groundwater sustainability.” Consistent with the VCIP’s project description, the GSP further provides: “The District’s objective with VCIP is to repurpose drainage-impaired and other agricultural lands for the generation of clean energy to promote enhanced agricultural productivity within the District.” Overall, the GSP determined that these agricultural land repurposing programs would “enhance the long-term sustainability of groundwater resources by addressing both water use reduction and regional economic transition, ensuring groundwater sustainability, and fostering environmental and community resilience” (DWR 2025a).

In furtherance of SGMA implementation for the Subbasin, this PEIR evaluates the potential physical environmental effects of renewable energy and infrastructure projects developed under the VCIP as authorized by AB 2661.

1.1.2. 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.

A Program EIR allows for a more comprehensive and coordinated consideration of effects and alternatives than would be practical for an EIR on separate individual actions, and ensures consideration of cumulative impacts that might be missed on a case-by-case basis. A Program EIR is not intended to examine the specific environmental effects associated with individual actions that may be undertaken under the larger program but are presently unforeseeable and would be determined at the project level. Subsequent environmental review may be required for later activities within the program pursuant to CEQA Guidelines section 15168(c) if they may result in effects not evaluated in the Program EIR.

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1.1.3. EIR SCOPING

The District determined the scope and content of this PEIR based on preliminary analyses and on comments received from the public and agencies, as described below.

Preliminary Determinations

The District’s preliminary evaluation determined that the following general topic areas were to be addressed in this EIR:

Aesthetics	Hydrology and Water Quality
Agriculture and Forestry Resources	Land Use
Air Quality	Mineral Resources
Biological Resources	Noise
Cultural Resources	Population and Housing
Energy	Public Services
Geology, Soils and Paleontological Resources	Transportation
Greenhouse Gas Emissions	Tribal Cultural Resources
Hazards and Hazardous Materials	Utilities and Service Systems
	Wildfire

One topic for which no potentially significant impacts are expected – “Recreation” – is briefly discussed in Chapter 5. *Effects Found Not To Be Significant*.

Notice of Preparation (NOP)

The District issued a Notice of Preparation on February 2, 2024, to advise public agencies and the public that a PEIR would be prepared for the Project and to solicit input on issues of concern that should be addressed in the PEIR. The NOP was sent to a mailing list that included Tribes; local, state, and federal agencies; other interested parties; and the Governor’s Office of Planning and Research, State Clearinghouse. The NOP also was emailed to all parties on the distribution list for whom the District had an email address, and was posted with the Fresno County Clerk and the Kings County Clerk. Also, an electronic copy of the NOP was posted on the District’s website, and the District provided notice to landowners within its service area of its intended preparation of the PEIR and of the availability of the NOP at the website. In addition, the District notified the public about the NOP and two planned scoping meetings through two newspaper legal advertisements published in the Fresno Bee and Hanford Sentinel on February 2, 2024. The NOP included a project description and a list of the topics to be covered in the PEIR. (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.) A copy of the NOP and comments received on the NOP and during the two scoping meetings are contained in the Scoping Report in Appendix A of this PEIR.

Summary of Comments Received on the NOP

Comment letters on the NOP were received from several public agencies, non-governmental organizations (NGOs), and advocacy groups. These included comment letters from the California Native Heritage Commission, California Department of Conservation, California Department of Fish and Wildlife, San Joaquin Valley Air Pollution Control District, Defenders of Wildlife, Pacific Coast Federation of Fishermen’s Associations, {00081323.1}

Environmental Coalition, Leadership Council for Justice & Accountability *and* Central California Environmental Justice Network (CCEJN), and Adams Broadwell Joseph & Cardozo. The NOP and comment letters are contained in the Scoping Report in Appendix A of this PEIR. The environmental issues raised in the comment letters are summarized below.

The letters from the state and regional local agencies are focused on technical issues within their areas of responsibility and include recommendations with respect to the PEIR's content in areas within their purview. These NOP comments are addressed under the environmental topics corresponding to the respective agencies' concerns (e.g., Cultural and Tribal Cultural Resources, Biological Resources, Agricultural Resources, Mineral Resources, and Air Quality).

The comment letter from Defenders of Wildlife included concerns with biological resources and expressed general support for the VCIP. The biological resources issues raised in the comment letter are addressed in this EIR in Section 4.4. *Biological Resources*.

The comment letters from the Pacific Coast Federation of Fishermen's Associations and Environmental Coalition expressed concerns with the issue of water supply and whether implementation of the VCIP will divert surface water from the federal Central Valley Project (CVP) to non-agricultural uses within the District, and related legal issues. The comment letter also suggested that the PEIR consider impacts to biological resources, air quality, transportation networks, and other construction-related effects. The environmental issues raised in this comment letter are addressed in relevant sections of this PEIR.

The comment letter from Leadership Council for Justice & Accountability *and* Central California Environmental Justice Network discussed a range of issues that should be addressed in the PEIR relative to residents' health, quality of life, and environment. The issues listed in the letter include air quality, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, geology and soils, fire hazards, noise, energy, aesthetics, cultural resources, and transportation. Specific issues raised include: public health impacts; heat-related health impacts and heat island effect; groundwater and impacts to small water systems, community water system, and domestic wells, alternatives, and cumulative impacts. The issues raised in this comment letter have been addressed in relevant sections of this PEIR.

The letter from Lozeau Drury LLP (on behalf of the California Unions for Reliable Energy (CURE)) requested that the District provide notice of the availability of any environmental review document as well as a copy of the environmental review document when available, and requests mailed notice of any and all hearings and/or actions related to the Project. No environmental issues are raised in this letter.

The District also received a comment letter from the Grassland Water District (GWD). This letter was originally submitted to Merced County in June 2024 to comment on the Supplemental EIR on the Las Camas Solar Project located southwest of the junction of I-5 and SR-152 near Los Banos. GWD submitted the same letter to the District since it contained issues germane to the VCIP PEIR. The comment letter expresses concern with potential impacts to the Grassland Ecological Area (GEA) which is an important resource area for migratory birds, with particular concerns related to the potential "lake effect" associated with solar facilities, as well as the potential for lighting impacts on birds.

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Summary of Comments Received at the Scoping Meetings

The District conducted two scoping meetings on the PEIR. The first scoping meeting was held at the District's offices in Fresno on February 15, 2024, and the second scoping meeting was held at the Cantua Creek Elementary School on February 28, 2024. A total of eight comments were received at the two scoping meetings, of which five were presented orally and three were submitted on comment cards. The commenters included representatives of the Leadership Council for Justice and Accountability and the Nor Cal Carpenters Union, three residents of Cantua Creek, and two other members of the public. The environmental issues raised at the scoping meetings are summarized below.

Aesthetics

- Glint and glare impacts from solar panels

Hazards and Hazardous Materials

- Potential hazards associated with lithium battery systems

Noise

- Potential noise impacts to sensitive receptors

Public Utilities and Systems

- Potential impacts to water supply for local residents

The commenters at the scoping meetings also provided questions and comments on matters that do not address environmental topics within the purview of CEQA, or are too general in nature, and therefore do not inform or pertain to the scope and content of the PEIR. These comments are summarized below and will be provided to the District's decision makers for their information and consideration.

- Will the project provide direct energy benefits to the residents who live near the solar fields?
- Will any of the energy generated by the solar arrays be used for hydrogen production?
- What will happen to the agricultural workers when the land is no longer used for agriculture?
- What are the benefits and harms of the project to the residents?
- What benefits will the project bring for the food and workers?
- Will our electric bill go down?
- The project should be built by contractors who hire locally.

PUBLIC AND AGENCY REVIEW OF THE DRAFT PEIR

The PEIR review process involves the following steps:

Public Notice/Public Review of Draft PEIR

Upon completion of the Draft PEIR (DPEIR), the District 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 District provided public notice of the availability of the Draft PEIR (DPEIR) 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 July 31 through September 15, 2025), during which

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time written comments on the DPEIR may be submitted to the Westlands Water District, either by mail addressed to P.O. Box 5199, 286 W. Cromwell Avenue, Fresno, California 93755 or by email to vcip@wwd.ca.gov.

Responses to Comments/Final EIR

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

Certification of the Final EIR

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

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 Pub. Resources Code, 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 final 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 15093(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

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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 District's Board of Directors must certify the PEIR prior to adoption of the Valley Clean Infrastructure Plan. If the PEIR is certified, then the District's Board may consider the VCIP for adoption. If the PEIR is certified and the VCIP adopted, then these actions will be final.

If adopted, within five working days of VCIP adoption, CEQA requires that the District file a Notice of Determination (NOD) with the County Clerk to certify that the VCIP has been formally adopted. This filing begins the running of a 30-day statute of limitations period during which legal challenges to the PEIR may be filed in Superior Court.

Mitigation Monitoring and Reporting Program (MMRP)

Upon certification of the PEIR, the District will also adopt a program for monitoring and reporting on the measures it has identified to mitigate, avoid, or substantially lessen any significant impacts associated with VCIP implementation. If discretionary approval of the individual solar and infrastructure projects under the VCIP 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. PERMITS AND APPROVALS

Westlands Water District

The District's purpose and function as CEQA lead agency for evaluation and potential approval of the proposed VCIP is to provide program-level CEQA review for the following actions by the District's Board of Directors:

- Adoption of the VCIP as the policy and planning framework for potential renewable energy projects through proposals by GSCE to develop clean energy generation, storage, transmission, and other ancillary and supportive uses within the Fresno County portion of the District's service area within identified development focus areas (DFAs) that would consist of both private and District-owned lands.
- Approval of District asset management activities, policies, or transactions in furtherance of VCIP implementation.
- Authorization of construction of District-sponsored projects on lands owned or leased by the District, including renewable energy projects such as solar and battery energy storage systems (BESS) facilities, and infrastructure projects such as collection substations, connecting transmission lines, and gen-tie lines.

Permits and approvals for solar and infrastructure development under VCIP from Fresno County and state and federal agencies are anticipated to include:

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County of Fresno (County)

Individual solar and energy storage projects proposed within the VCIP may be subject to the several discretionary approvals from Fresno County, as listed below. Fresno County decision makers may utilize the program-level environmental review of this PEIR in preparing second-tier project-specific environmental documents on discretionary approvals for individual solar and energy storage projects proposed within the VCIP Plan Area, and their associated gen-tie projects. Permits and authorizations which may be provided by Fresno County include the following:

- Unclassified Conditional Use Permits (UCUPs) for individual solar/BESS projects and gen tie segments proposed on private lands within the Plan Area.
- Vesting Tentative Parcel Maps (or Lot Line Adjustments) to create land divisions corresponding to the boundaries of the individual solar and energy storage projects, as necessary.
- Encroachment Permits for work in County road rights-of-way, and for utility crossings over or under County roads.
- Transfer Permits obtained from Fresno County Public Works Department for oversized or excessive loads on County Roads.
- Grading Permits for site preparation and grading for the projects.
- Building permits and other ministerial permits. (Note: Public utility projects that are subject to approval by the California Public Utilities Commission (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 any of the VCIP transmission line segments within Fresno County are subject to CPUC jurisdiction, the County would review those VCIP transmission line projects for consistency with County plans and policies.)

Western Area Power Administration (Western or WAPA)

It is anticipated that WAPA will serve as the federal lead agency in sponsoring one or more outside transmission line projects connected with VCIP. WAPA 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 PEIR with respect to the potential VCIP projects may be relied upon in preparing NEPA documents on these transmission projects.

California Public Utilities Commission (CPUC)

It is anticipated that the VCIP gen-tie projects would be privately constructed and operated. However, it is possible that some or all of the VCIP collection substations and some transmission lines may be constructed by or for PG&E, Southern California Edison (SCE), or another regulated entity subject to the authority of the CPUC. The CPUC may issue Permits to Construct (PTCs), or Certificates of Public Convenience and Necessity (CPCNs). The CPUC may utilize the information in this PEIR to inform their decisions and approvals.

It is noted that the California Energy Commission (CEC) generally does not have jurisdiction over the potential VCIP solar PV or energy storage projects, unless a project proponent voluntarily elects to opt into CEC jurisdiction through the CEC's Opt-In Certification Program. The CEC has jurisdiction over concentrating solar (thermal solar)

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projects over 50 MW. The CEC does not have jurisdiction over transmission project permitting. 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. The CEC may utilize the information in this PEIR to inform its decisions and approvals.

State and Regional Agencies

In addition, the information in this PEIR may be used by the following responsible and trustee state and regional agencies for their separate permit and review processes in conjunction with subsequent approvals of individual solar and infrastructure projects proposed under the VCIP.

San Joaquin Valley Air Pollution Control District (SJVAPCD or Air District): 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) Approval of permanent project access to a state highway; 3) Single-trip transportation permits for oversized or excessive loads on state highways. The latter permits are issued in coordination with the California Highway Patrol.

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 transmission or gen-tie crossings over the San Luis Canal/California Aqueduct.

Federal Agencies

U.S. Bureau of Reclamation (USBOR): Encroachment permits for utility crossings over the federally-owned San Luis Canal segment of the California Aqueduct or the Coalinga Canal/Pleasant Valley system, and possibly other lands owned by USBOR related to the outside transmission lines.

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.

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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.

Federal Aviation Administration (FAA): Notice of Proposed Construction or Alteration to be submitted to FAA for projects located within or near air traffic corridors.

References

DWR 2025a California Department of Water Resources (DWR). January 2025. *Amended GSP – 5-022.9 Westside*. <https://sgma.water.ca.gov/portal/gsppe/update/view/8>

2. PROJECT DESCRIPTION

2.1. OVERVIEW OF THE VCIP

Consistent with the mission of Westlands Water District (District) to provide timely, reliable, and affordable water service to landowners and water users in western Fresno and Kings Counties, the Valley Clean Infrastructure Plan (VCIP) is intended to provide an overall plan to guide and facilitate the beneficial repurpose of drainage-impaired and other private and District-owned lands within the District's boundaries, through proposals by Golden State Clean Energy (GSCE) and any other potential project proponents to develop clean energy generation, storage, transmission, and other ancillary and supportive energy uses in a manner that furthers the District's mission.¹

The VCIP is a regional non-regulatory master planning tool for the structure and major components of clean energy projects in the District's service area, involving potential construction of transmission lines, generation tie lines, substations and related infrastructure for conveyance of clean energy, and the actual generation and storage of clean energy, subject to permits or land use entitlements issued by other public agencies with regulatory authority. For the District's planning purposes, the VCIP and its potential clean energy projects are subject to CEQA review as the "whole" of the proposed "action" in relation to decisions the District may make in evaluating and approving its own policy decisions and transactions, and to inform future permitting and regulatory proceedings.

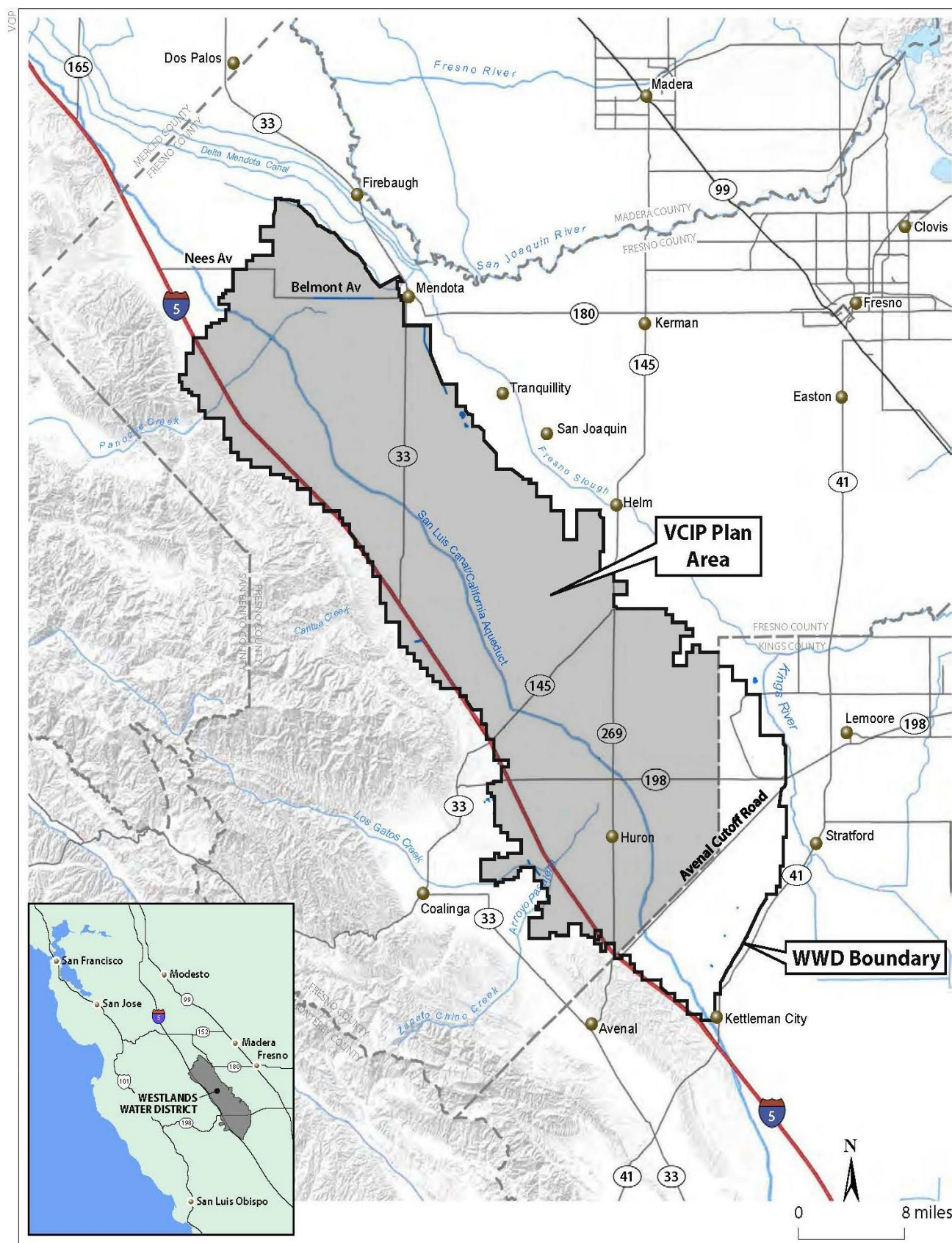
The VCIP is intended to achieve a number of water supply and energy-related objectives (see Section 2.2), and includes two main elements:

- 1) Energy Resource Plan – This element identifies specific areas within the Plan Area (see Figure 2.1-1) that have been identified for potential renewable energy development, including solar photovoltaic (PV) facilities with integrated energy storage systems (ESS), along with typical supporting facilities such as Operations and Maintenance (O&M) facilities and project substations. Separate ESS facilities located outside of solar projects and dedicated solely to energy storage are also included in the Plan.
- 2) Infrastructure Plan – This element consists of the transmission facilities and collection substations required for the collection of solar generation within the Plan Area, and for the delivery of renewable energy to electricity markets in California. The energy produced at the solar facilities would be transferred to generation tie-lines (gen-tie lines) for conveyance to one of five new collection substations to be distributed throughout the Plan Area. The collection substations would provide for interconnection to the state and federal power systems for delivery of the solar generation outside the VCIP.

Plan Area Definition

¹ Besides Golden State Clean Energy, the District is not aware of any other solar developers that intend to submit proposals pursuant to the proposed VCIP.

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Source: Westlands Water District, 2022

VCIP Plan Area
Figure 2.1-1

The Plan Area for the VCIP encompasses the entire Fresno County portion of the District’s service area. This area comprises a total of about 534,800 acres within the District’s approximately 614,700-acre overall service area. Solar and infrastructure development within the Kings County portion of the District’s service area is covered by the Westlands Solar Park Master Plan, which was adopted by the District’s Board of Directors on January 16, 2018. No additional lands within the Kings County service area have been identified for potential clean energy development as part of the proposed VCIP.

Development Focus Areas

Within the defined Plan Area, approximately 136,000 acres have been identified as “Development Focus Areas” (DFAs)(see Figure 2.1-2). These lands, which are suitable for clean energy development, include the following: (1) approximately 72,000 acres of District-owned land;² and (2) approximately 64,000 acres of privately-owned lands for which the landowners have expressed interest in clean energy facilities. The 136,000 gross acres in the DFAs would accommodate the planned generation capacity of up to 21,000 megawatts (MW) under the VCIP . (This is based on the current average development intensity for PV solar of about 6.5 gross acres per MW, which includes solar PV generation and energy storage facilities, substations, and other ancillary facilities).

2.2. PROJECT OBJECTIVES OF THE VCIP

The VCIP is intended to fulfill the following overall goals of the project proponents: (1) Westlands’ mission of water supply reliability/water service efficiency; and (2) state and GSCE goals for renewable energy, in addition to objectives related to water supply, energy, climate change, and economic development. The specific project objectives of each of the project proponents are set forth below.

Westlands Water District

- Utilize the District’s location, topography, and excellent insolation (solar radiation energy) attributes to promote the siting of solar generation, storage, and transmission of renewable energy, in furtherance of federal, state, and local renewable energy and carbon reduction goals over approximately 35 years.
- Balance the promotion of long-term but temporary development of solar energy projects and associated storage and transmission facilities with the protection of environmental resources, which may include, among other things, protection of agricultural, biological, cultural, and water resources.
- Avoid or substantially reduce environmental impacts associated with solar development, construction, and operation through low-impact design, short construction timeline with minimal ground disturbance, low amounts of impervious surfaces, the continued use of existing habitat by present wildlife, co-location of energy and agricultural activities where practicable.

² The 72,000 acres of District-owned DFA lands include four solar/battery storage projects which were pending project-level approval when the NOP for this PEIR was issued on February 2, 2024. These projects include the Darden, Sonrisa, Heartland, and ICF Rosemary solar projects. Since these projects are within the VCIP DFAs, they are included in the plan-level analyses in this PEIR, and therefore they are not duplicated in the cumulative analyses in this PEIR. {00081324.1}

- Ensure financing of decommissioning and site reclamation at the end of the project life in order to restore the site to conditions suitable for agricultural use.
- Utilize existing facilities, roads, and other infrastructure to the extent feasible.
- Identify preferred transmission corridors to efficiently convey renewable energy from VCIP projects to the statewide electricity market and reduce dependence on, and environmental impacts such as wildfire risk associated with, long-distance transmission.
- Contribute to the solution of reduced water supply reliability by (i) providing productive long-term but temporary repurposing of those lands from irrigated agriculture and for renewable energy production, and (ii) ensuring irrigated agriculture on the repurposed lands can be restored following the decommissioning of the renewable energy projects, particularly with advancement of water conservation and irrigation technologies.
- Facilitate implementation of the Sustainable Groundwater Management Act (SGMA) by: (i) contributing to the conjunctive use of groundwater for irrigation, (ii) promoting drought resiliency, (iii) reducing the likelihood of undesirable results like subsidence, including in the vicinity of sections of the San Luis Canal/California Aqueduct, and (iv) implementing the VCIP pursuant to the Westside Subbasin Groundwater Sustainability Plan (GSP) in conjunction with other agricultural land repurposing management actions.
- Address the chronic shortage of CVP contract water deliveries by promoting repurposing of farmland and by facilitating the redirection of scarce surface water allocations to other productive agricultural land within the District.
- Provide utility-scale power generation on farmland that has been fallowed or removed from irrigated agriculture due to lack of a reliable surface water supply, which reduces pressure to develop renewable energy on prime agricultural land elsewhere. Promote expeditious and efficient repurposing of farmlands through a comprehensive planning process to address transmission capacity constraints on further incremental clean energy development in the District.
- 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).
- Contribute to overall reduction in greenhouse gas emissions by generating electricity that is not based on the combustion of fossil fuel.
- 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 job creation and training programs for local residents, use of local businesses and vendors, financial contributions to community development projects and programs, and increased property tax and sales tax revenues.

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Golden State Clean Energy

- Help implement the state’s Global Warming Solutions Act of 2006 (AB 32), as supplemented in 2016 by SB 32, by facilitating the development of up to 21,000 MW of non-fossil fuel based sources of electricity that will replace existing fossil-based generation and thereby contribute to achieving the state’s goal of carbon neutrality by 2045.
- Provide new sources of energy storage that support the state in achieving its renewable energy and carbon neutrality targets, and provide transmission facilities for conveying the renewable energy to the state’s electrical load centers.
- Potentially provide the District with a direct source of renewable energy for operation of the District’s Groundwater Management Program wells, filtration booster pumps, and other District owned facilities.
- Provide for utility-scale energy generation on disturbed lands which provide minimal habitat value for wildlife.
- Provide the foundation for a renewables development program which will generate an average of 6,000 construction jobs for at least 10 years, in addition to approximately 800 permanent jobs and approximately 400 part-time jobs upon the VCIP buildout.
- Promote local hiring by establishing a job creation and training program for local residents.
- Positively contribute to the local economy through stimulation of economic activity such as creation of secondary multiplier employment and local procurement of equipment, goods and services.
- Provide community benefits through increased property tax revenues and increased sales tax receipts through local procurement and establishment of local points of sale for materials sourced from outside the area.

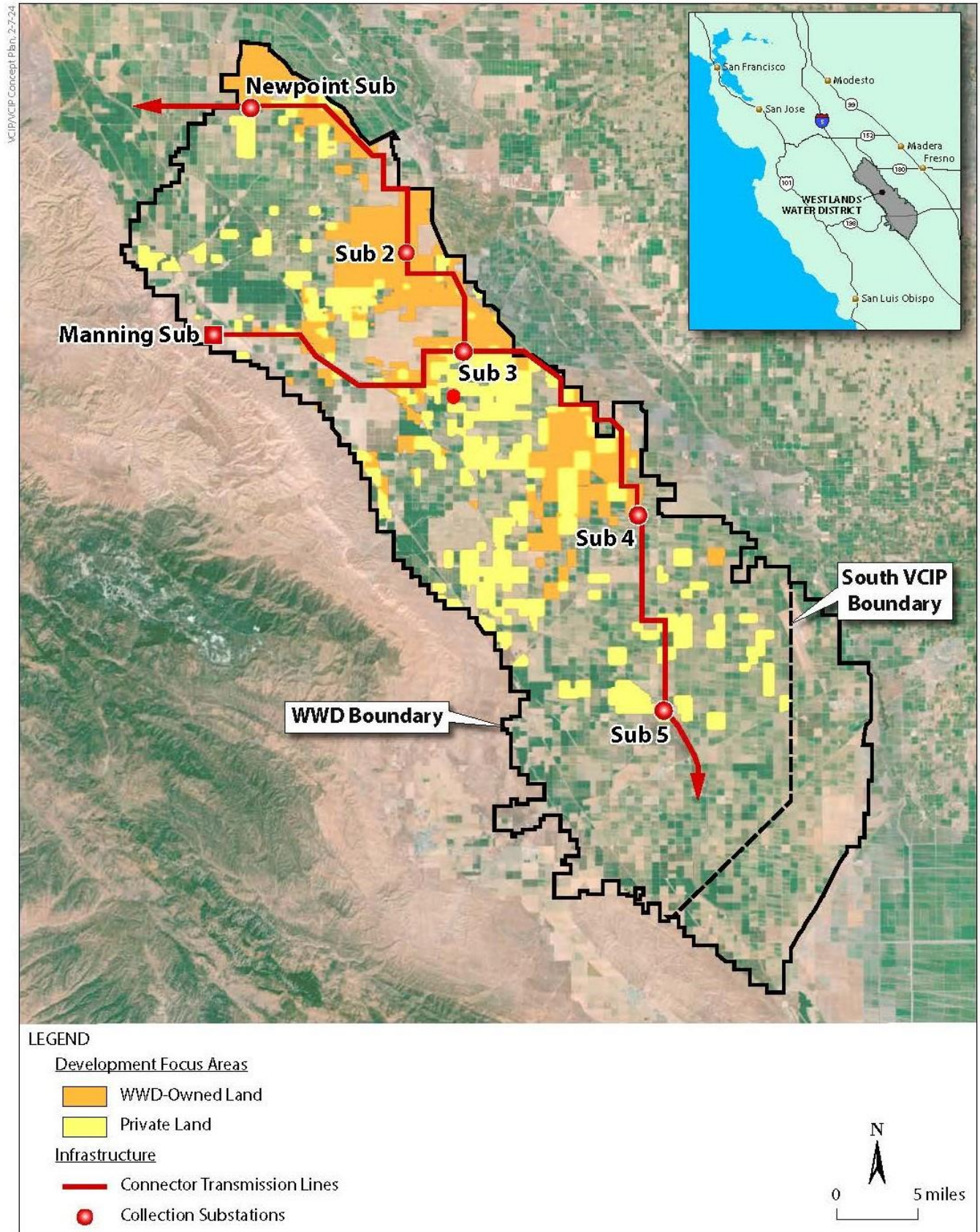
2.3. OVERVIEW OF THE VCIP COMPONENTS

The main components of the VCIP are summarized below. The conceptual plan for clean energy development and transmission infrastructure is shown in Figure 2.3-1. The various components of VCIP are described in greater detail Section 2.4.

2.3.1. Energy Resource Plan

The primary components of the Energy Resource Plan consist of clean energy development in the form of: (1) solar PV generating facilities; and (2) stand-alone energy storage facilities, as described in turn below.

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1. Solar PV Generating Facilities

The individual solar PV facilities would range in size from 100 MW (on approximately 640 acres) to about 1,150 MW (on approximately 7,500 acres), with the latter representing the approximate maximum generation that can be accommodated by a double-circuit 230-kV gen-tie line. It is assumed that a typical solar PV facility would have a generating capacity of 250 MW and would occupy about 1,600 acres. This project size represents the approximate upper limit for project size that is manageable for construction contractors and for financing.

Upon completion, full buildout of the contemplated VCIP solar facilities would have a total generating capacity of 21,000 megawatts (MW), which would generate approximately 33,484,500 megawatt hours per year (MWh/yr), which is based on the 2023 average generation of 1,594.5 MWh/MW from the five largest solar operating solar facilities in Fresno County (CEC 2024f). This is equivalent to the average electrical consumption of 5,683,045 California homes in 2023 (at 5,892 kilowatt-hours per year [kWh/yr] per home) (US EIA 2024a).

It is assumed that each solar facility would include an on-site battery energy storage system (BESS) integrated into the project design with a maximum storage capacity equivalent to the facility's generation capacity. A typical facility could include up to 250 MW of storage. Currently, these facilities would likely utilize lithium-ion batteries but could include other technologies as described in Section 2.4.1.2.

It is noted that while incorporation of energy storage facilities as an integral component of solar generating facilities has become standard, it is also likely that the VCIP would include solar facilities with smaller energy storage capacities or may have no on-site energy storage. However, it is unlikely that the typical 250-MW solar facility would include more than 250 MW of energy storage facilities. For purposes of this PEIR, it is assumed that the typical 250-MW solar PV facility will include 250 MW of energy storage. Each solar facility would also include O&M facilities, and an on-site 230-kV substation, which would convey the solar generation to a gen-tie line (described subsequently).

2. Energy Storage Facilities

As an alternative to co-locating and integrating the BESS facilities with the solar PV facilities, the VCIP also contemplates up to 10,000 MW of stand-alone energy storage facilities (with a total storage capacity of up to 40,000 MW hours) which would operate independently of solar generation facilities, and which would occupy a total combined land area up to approximately 500 acres. These facilities would provide temporary storage for solar power generated at off-site solar facilities, and would dispatch the stored power to the electrical grid when needed. It is anticipated that each stand-alone energy storage facility would have up to 1,150 MW of storage with a capacity of 4 hours per MW, or a total capacity of 4,600 MW hours (MWh), although advances in battery technology would allow for longer duration of storage per MW. The locations of these stand-alone energy storage facilities have not been determined, but it is anticipated that they would be located near the VCIP collection substations described below in order minimize the length of gen-tie lines. Currently, a typical energy storage facility would likely utilize lithium-ion batteries, but other storage technologies could be employed, as discussed in Section 2.4.1.2.

It is noted that while the VCIP contemplates up to 10,000 MW of energy storage facilities, it is possible that the total overall energy storage capacity of stand-alone facilities ultimately installed in the Plan Area may be less, but is unlikely to be greater. It is also noted that the total planned capacity of energy storage facilities in the VCIP, located in both solar PV projects and in stand-alone projects, will not exceed a combined total of {00081324.1}

21,000 MW of energy storage. The proportion of energy storage systems that will be co-located with solar PV facilities versus energy storage located in stand-alone facilities will be determined by prevailing market conditions and cannot be determined at this time. For purposes of analysis in this PEIR, it is assumed that all energy storage will be co-located with solar PV facilities. Since the land coverage and quantitative data related to energy storage (e.g., traffic generation, air quality impacts, etc.) would be the same for stand-alone energy storage facilities and storage facilities co-located with solar PV projects regardless of location within the VCIP, the PEIR analysis would provide full coverage of the potential impacts of all energy storage facilities up to an overall planned capacity of 21,000 MW. The VCIP BESS facilities would be manufactured, installed, and maintained in accordance with all applicable fire codes and product standards. As described below, the BESS facilities would also be subject to testing pursuant to recent industry-standard test methods designed by UL Solutions (UL) to demonstrate compliance with all applicable fire safety and building code requirements for BESS systems.

2.3.2. Infrastructure Plan

The primary components of the proposed VCIP Infrastructure Plan consist of transmission and interconnection facilities, including: (1) Gen-Tie Lines; (2) Collection Substations; and (3) Connector Transmission Lines within the VCIP. These infrastructure facilities are described in turn below.

1. Gen-Tie Lines

Each solar PV generating facility and stand-alone energy storage facility would be served by a 230-kV generation-interconnection tie-line (gen-tie line) which would convey the generated power to one of five 500/230-kV collection substations within the VCIP. The gen-tie lines would branch out from each collection substation to serve the solar and energy storage facilities in the vicinity. The precise alignments of the gen-tie lines would depend on the size, location and timing of solar and energy storage projects as they are planned to come on-line. Since the pattern of the gen-tie network that is ultimately constructed can vary widely, the routing of individual gen-tie lines cannot be defined at a plan level under the VCIP. However, the general construction and operational nature of the gen-tie facilities can be characterized in sufficient detail to allow for their meaningful evaluation in the PEIR at a programmatic level.

2. Collection Substations

The Infrastructure Plan includes five collection substations which would be distributed from north to south along the backbone transmission corridor running through the eastern portion of the Plan Area (described below). These 500/230-kV substations would serve as collection points for power generated in the surrounding DFAs as received from the gen-tie network and would provide interconnection to the state and federal power systems. It is expected that each collection substation would accommodate approximately 4,000 MW of solar power generated at solar facilities occupying an average of about 26,000 acres around each substation. Each collection substation is anticipated to have a footprint of about 60 acres, to be located within a larger site of about 160 acres which would provide sufficient buffer area to accommodate the convergence of incoming gen-tie lines from the nearby solar generation and energy storage facilities.

It is noted that a new substation (Manning) is currently proposed within the VCIP Plan Area on the south side of W. Manning Avenue, approximately 2 miles west of I-5. The planned Manning Substation is currently in the CPUC approval process and is scheduled to be in service in June 2028. The Manning Substation is intended to add resilience to the larger electrical grid and will be constructed with or without the VCIP solar development.

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The CPUC approval process includes a CEQA-equivalent environmental review process which is independent of this PEIR. As such, the Manning Substation project is not part of the VCIP and is not covered in this PEIR except as a cumulative project. It is anticipated that up to 1,100 MW of VCIP solar generation, from 7,000 acres of solar facilities in the west-central portion of the Plan Area, would be conveyed to the state power grid through the Manning Substation.

3. Connector Transmission Lines within the VCIP

The five collection substations within the VCIP would be connected by a backbone transmission corridor running through the eastern portion of Plan Area in a northwest-southeast direction. This corridor would have a total length of approximately 59 miles and would collect VCIP-generated power and provide interconnection to the state and federal power systems.

It is anticipated that the VCIP connector transmission corridors would include up to two parallel 500-kV transmission lines within 1,000-foot wide corridors. The two parallel lines would require a combined right-of-way of approximately 450 feet, with the additional width included to provide equipment maneuvering space during construction as well as design flexibility at the engineering stage.

In addition, a central transmission corridor is planned to run east-west through the Plan Area to provide connection between the VCIP backbone corridor at Substation No. 3 and the new Manning Substation planned for the vicinity of W. Manning Avenue and Interstate 5. This connecting transmission corridor would be approximately 20 miles long and would provide an alternative path for energy exported from the VCIP to connect to the larger grid and provide redundancy and resilience to the system. As noted above, the Manning Substation is not part of the VCIP; however, the 20-mile connecting transmission line connecting the VCIP to the Manning Substation is part of the VCIP.

2.3.3. VCIP Development Timeline and Phasing

It is anticipated that the VCIP solar facilities and infrastructure would be completed within an 11-year development period, with construction planned to start in 2028 and with full buildout anticipated in 2038. The VCIP development is planned to progress incrementally from north to south, such that solar PV and energy storage projects and their associated gen-tie lines would be constructed in conjunction with the incremental completion of collection substations and collector transmission lines, as they are extended southward through the Plan Area. For example, the DFAs around the Newpoint Substation in the north would be developed first, followed in subsequent years by development of DFAs around Substation 2, and so forth. In the early years, the development pace is expected to reach 2,300 MW per year, which will diminish slightly over time and result in an average annual development pace of about 2,000 MW. It is important to note that given the length of time required to complete the initial infrastructure improvements (e.g., the Newpoint Substation will require two years to complete, beginning in 2028), the solar PV projects are not planned to begin construction until a year later (e.g., 2029). Therefore, the buildout of the proposed Energy Resource Plan would be expected to occur over 10 years (e.g., 2029 through 2038).

It is recognized that the location and timing of individual solar and energy storage projects within the VCIP 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 delivery facilities, which may vary from the sequence described above. However, the timeline and phasing concept presented above represents the District's best efforts to identify the most reasonably foreseeable scenario for purposes of analysis in the PEIR.

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2.4. TRANSMISSION DELIVERY LINES OUTSIDE THE VCIP

The development of renewable energy projects under the VCIP will drive the need for new transmission development outside the Plan Area to deliver the VCIP renewable generation to load centers in northern and southern California. These transmission delivery corridors extend far beyond the District's boundaries and are not part of the proposed VCIP. Planning and approval of these outside transmission lines are under the jurisdiction of the state and federal energy regulatory agencies, and public utilities. No specific bulk transmission projects are currently planned by the state or federal energy agencies or others to convey VCIP solar generation to the load centers. In light of these facts, no attempt has been made to define specific new bulk transmission lines as part of the VCIP planning process.

However, the PEIR includes a conceptual description of potential transmission routes outside the Plan Area to allow a general discussion of environmental impacts associated with transmission line development for informational purposes. Based on preliminary power flow studies, the amount of generation that would be delivered to the regional load centers was estimated, which allowed the development of a conceptual plan of transmission routing and capacities that would be required to deliver renewable generation from the VCIP to the load centers. Although no specific transmission routes or substation upgrades outside the Plan Area have been defined, it is assumed for conceptual planning purposes that the required new transmission lines would run adjacent to existing transmission corridors to major regional substations at the load centers. Specifically, it is assumed that these outside transmission corridors would extend north to the Tesla Substation and the Tracy Substation, west to the Moss Landing Substation, and south to the Midway Substation and the Vincent Substation (see Figure 2.4-1).

Since these transmission improvements would be integral to planning and programming of grid-level transmission state-wide, which will require coordinated efforts of Westlands Water District and potentially multiple state and federal agencies and utilities, it is speculative and premature to undertake specific route planning or design for such bulk transmission facilities. Thus the conceptual transmission routes identified in this PEIR have not been evaluated for the specific locations, constructability, desirability, cost, or likelihood of their successful permitting. They also have not been studied by transmission planning groups to identify their effects on other transmission systems.

For purposes of completeness under CEQA, the assumed transmission routes are evaluated in this PEIR to a level of detail commensurate with the conceptual level at which they have been identified and described. Based on the assumed corridors, it is possible to estimate the approximate linear miles and approximate acreages and the general nature of land disturbance associated with the outside transmission corridors. This high level of description of conceptual transmission corridors will allow a general evaluation of potential environmental impacts associated with transmission line development for informational purposes. The transmission corridors outside the Plan Area are further described in Section 2.5.2.4.

In summary, it is important to emphasize that the conceptual transmission routes assumed in this PEIR are not part of the VCIP and have no formal planning status with the state and federal electricity regulating agencies and utilities. As such, the high level of discussion of the outside transmission corridors in this PEIR is intended to provide an overview of potential impacts for informational purposes only, and is not intended to provide a first-tier environmental analysis under CEQA.

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Source: Google Earth 2024

Conceptual Transmission Corridors
Figure 2.4-1

2.5. DESCRIPTION OF THE VCIP COMPONENTS

The various components of the VCIP are described in detail below. Since the VCIP is a program-level master plan for clean energy facilities and infrastructure development, the construction-level details of future projects to be developed under the VCIP are unknown at this time. However, the solar, storage, and infrastructure elements contemplated under the Plan would have a high degree of uniformity from one project to another and would be similar in character to solar, storage, and infrastructure projects that have been developed in the region over the past 15 years (i.e., since 2010). Typical projects within each category (e.g., solar generation, energy storage, transmission, substations) are described to a sufficient level of detail to form the basis of a programmatic analysis of environmental impacts for purposes of CEQA. The typical projects contemplated for each Plan component are described in detail below.

2.5.1. Energy Resource Plan

The components of the Energy Resource Plan include: (1) solar generating facilities; and (2) stand-alone energy storage facilities, each of which is described in turn below.

2.5.1.1. SOLAR PV GENERATING FACILITIES

2.5.1.1.1. TYPICAL SOLAR PROJECT COMPONENTS

As discussed above, the typical solar generating facility under the VCIP would have a generating capacity of 250 MW on approximately 1,600 acres. The solar facilities would include the following components, each of which are described in greater detail below:

- Photovoltaic (PV) Modules and Trackers
- Power Conversion Stations (PCSs)
- Project Substation
- Telecommunications Facilities
- Meteorological Data Collection System
- Battery Energy Storage System (BESS)
- Operations and Maintenance (O&M) Facilities
- Site Access Roads
- Lighting
- Signage
- Perimeter Fencing

Photovoltaic (PV) Modules and Trackers

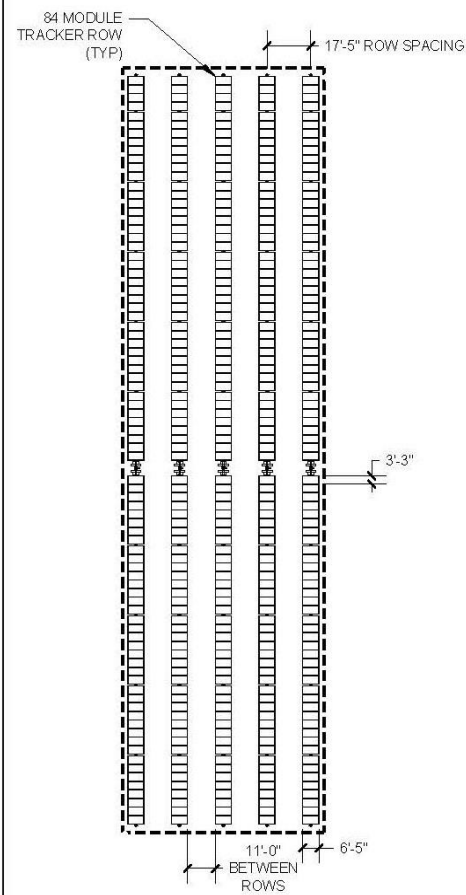
The typical solar project would utilize photovoltaic (PV) panels or modules to convert sunlight directly into electricity. The most commonly used photovoltaic modules are composed of mono-crystalline silicon solar cells arranged on panels/modules measuring up to 8 feet by 4 feet, and protected with tempered glass panes (see Figure 2.5-1). The PV cells are dark in color to maximize absorption and minimize reflectance of sunlight.

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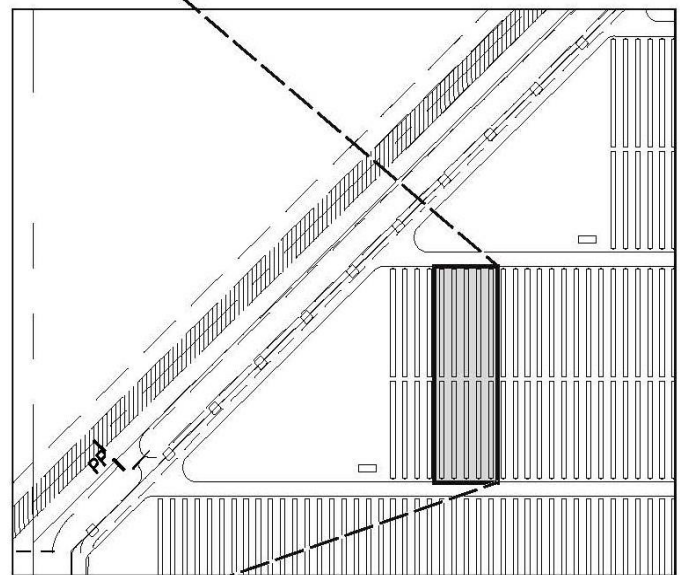
VCIP



Solar PV Modules on Horizontal Trackers



Solar Array



Plan Detail

Typical Solar Array Details
Figure 2.5-1

A less commonly used solar technology consists of thin-film modules, which typically utilize cadmium-telluride (CdTe) cells. While it is not expected that thin-film modules would be utilized within the VCIP, the PEIR includes a discussion of the potential impacts associated with thin-film modules (see Section 4.9. *Hazards and Hazardous Materials*).

The solar mounting systems that are most commonly employed consist of horizontal tracker systems which rotate the solar modules to follow the arc of the sun over the course of the day. Although there are other types of mounting systems, such as fixed-tilt systems, it is not expected that these would be utilized in the VCIP. (The overall impacts associated with fixed-tilt systems are almost indistinguishable from tracker systems, thus any differences in potential impacts would be negligible.) The PV panels and mounting systems would be supported by steel posts (cylindrical pipes, H-beams, or C-channels) which would be driven into the ground using truck-mounted vibratory drivers. The support posts would be installed at approximately 25 foot intervals to depths of 4 to 10 feet, with actual depths depending on localized soil conditions and load factors. The completed rows of solar modules would be spaced approximately 20 feet apart (on center), with the tracking pivot point approximately 5.5 feet above the ground surface. At maximum tilt, the solar modules would reach a height of up to 12 feet above ground level, depending on the module size and pivot height of the mounting system, while the lower module edge would be approximately 18 inches from the ground surface at its lowest point. When the modules are in their horizontal position (at noon or at rest), the rows of modules would be separated by approximately 12 feet of clear area.

Power Conversion Stations (PCSs)

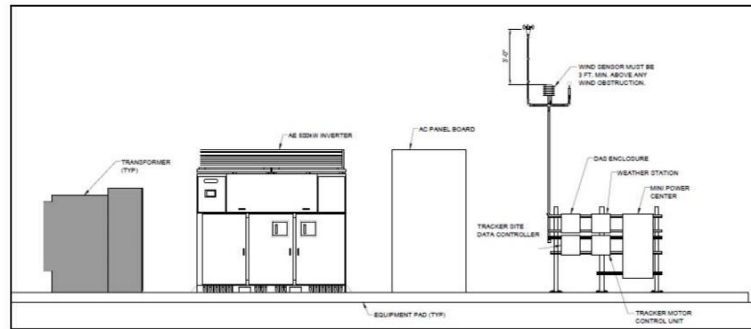
The electrical output from the PV modules would be collected as DC (direct current) by cables harnessed to the underside of the modules and collected in combiner boxes at each array and then delivered via above ground or underground cables to the Power Conversion Stations (PCSs) dispersed throughout the solar facility (see Figure 2.5-2). The PCSs would include inverters and transformers to convert the generated power to collection voltage. The inverters would convert the DC electrical output to AC, and the transformers would step up the inverter output voltage to intermediate collection voltage (e.g., 34.5-kV). The transformers would contain a vegetable-based oil as an insulating fluid (e.g., FR3). The converted power would be conveyed via buried cables to the project substation. Trenching for cables would occur in the project driveways and would be approximately 3 feet wide and 4 feet deep and would be backfilled with native material after cables are laid. The PCSs would be placed on equipment pads at predetermined locations where each PCS would be rated at approximately 4 MW of AC power. The typical 250 MW solar project would include approximately 70 PCSs, each on a concrete pad measuring approximately 30 by 6 feet, with a maximum height of 12 feet.

Project Substation

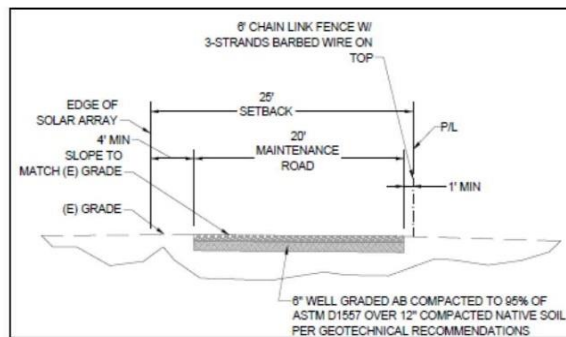
Output from the PCSs would be transferred via buried electrical conduits and cables to an on-site substation. The substation would occupy up to 3 acres adjacent to the project O&M yard and would collect consolidated solar generation from the PV collection system and step-up the intermediate collection voltage from 34.5-kV to 230-kV via high-voltage transformers. The stepped-up voltage would then be typically transferred to an adjacent switching station and conveyed via gen-tie line to the solar facility's point of interconnection at the nearest collection substation within the VCIP. The project substation would include transformers, breakers, switches, meters, relays, a control house, and other related equipment (see Figure 2.5-3). Interconnection equipment, including the control house, would be installed aboveground and underground within the footprint of the substation.

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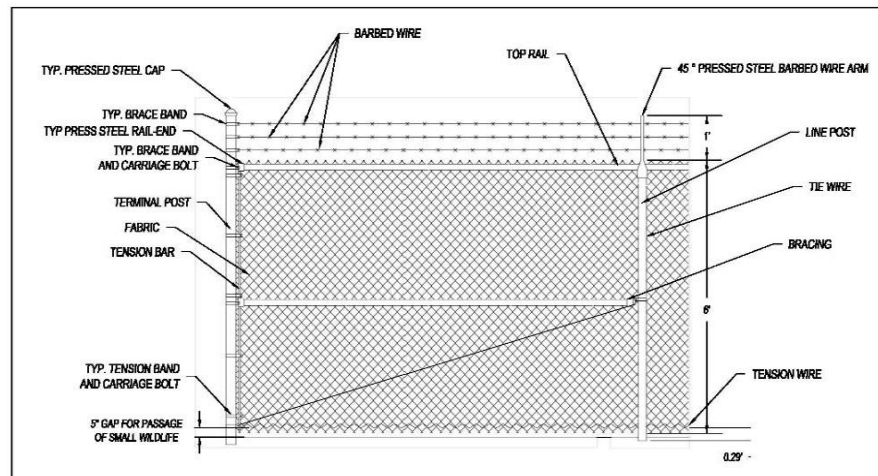
VCIP



Inverter/Transformer Pad



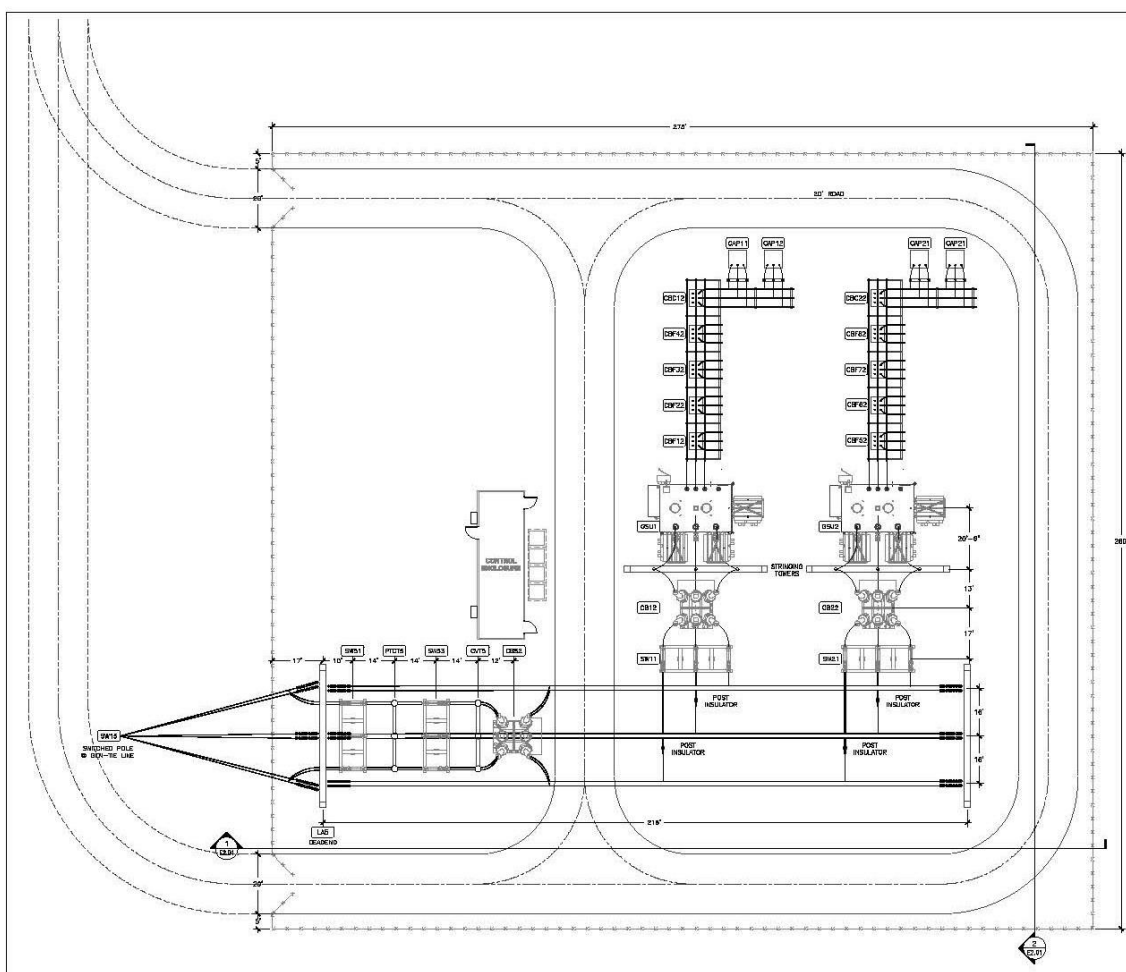
Internal Maintenance Road



Perimeter Fence

Typical Solar Facility Details
Figure 2.5-2

VCIP



230-kV Substation Plan

Typical 230-kV Project Substation
Figure 2.5-3

The transformers would contain mineral oil as an insulating fluid, and the substations would be designed to contain any accidental spill of transformer fluid. The tallest structural elements within the on-site substation would be dead-end structures up to 75 feet high. Each dead-end structure would require foundations excavated to a depth of 20 feet or more. The substation would be enclosed by an eight-foot chain-link fence topped with barbed wire and would comply with electrical codes. The substation would have access to communication systems in the area to comply with state, federal, and utility monitoring, control and dispatch requirements. Compliance would be accomplished by underground lines, aboveground lines, or wireless communication. Each project substation would be designed to be unstaffed, with automated features and remote-control capabilities.

Battery Energy Storage System (BESS)

The typical 250-MW solar project would include a 10- to 20-acre dedicated energy storage area adjacent to the on-site substation for the purpose of optimizing delivery of generated power to the electrical grid. The energy storage system would use one or more proven battery storage technologies such as lithium ion, sodium-sulfur, or vanadium-redox-flow batteries, and could potentially include flywheel banks housed in electrical enclosures. Emerging storage technologies which could be employed include sodium ion and zinc batteries. Currently, the most common energy storage technology is lithium-ion batteries. (For purposes of the PEIR analysis, it is assumed that lithium-ion battery storage would be utilized although other emerging technologies mentioned above could also be employed. The PEIR discussion will note differences in impacts associated with the different storage technologies, as appropriate.) The amount of battery storage included within solar PV projects can vary widely from as little as no BESS up to a storage capacity that is equivalent to the solar facility's generating capacity (i.e., 250 MW). For purposes of this PEIR, it is assumed that the typical 250 MW solar facility would include 250 MW of battery storage.

The battery facilities would consist of 250 prefabricated battery modules or containers, each with a storage capacity of about 4 MW hours, for a total storage capacity of about 1,000 MW hours. Generally, each on-site energy storage system would provide storage of generated power when grid demand is low and provide for delivery of stored power when grid demand is high. The battery storage units would typically consist of metal containers 40 feet long by 8 feet wide by 8.5 feet high. Each storage unit would be self-contained and would include battery racks, switchboards, integrated HVAC units, and inverters. Typical energy storage facilities are shown in Figure 2.5-4. The transformers for the battery units would be located outside the battery containers on dedicated equipment pads with each transformer set serving four battery containers. (In some energy storage systems, the inverters are co-located with transformers outside the containers.) Thus, the project battery storage systems would include a total of 250 battery containers and 63 transformers. The energy storage containers and transformers would be founded on concrete pads, or could utilize foundation systems consisting of concrete piles and steel beams. The areas between the containers would be surfaced with crushed aggregate. The enclosures would have appropriate fire suppression and safety systems in compliance with UL standard 9540, *Standards for the Installation of Stationary Energy Storage Systems*. The batteries and containers must also comply with UL 9540A fire test criteria which require battery fires to be contained within a single container. Each energy storage unit used on site would be designed in compliance with the UL 9450 safety standard (UL 2025) and the most up-to-date version of the California Fire Code section 1207 ("Electrical Energy Storage Systems" (ESS)), which has been adopted as part of the Fresno County Fire Code (i.e., Fresno County Code of Ordinances, section 15.10.010) to minimize risk of fire from stationary storage battery systems and contain fire in the event of such an incident (Fresno County 2024i). (For a detailed discussion of potential fire risks associated with BESS and a description of the fire standards and codes that address it, see Section 4.9. *Hazards and Hazardous Materials*, under Impact HAZ-2.)

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Typical Energy Storage Facility
Figure 2.5-4

In the unlikely event of battery fire, water for fire suppression would be obtained from an on-site water tank with storage capacity as specified by the Fresno County Fire Protection District (FCFPD), which would also specify minimum fire flows. Consistent with industry-standard practices, water would not be applied directly to any burning battery units but would be applied to nearby battery containers as needed to reduce heat buildup. For potential VCIP projects on lands currently owned by the District, water supply for the on-site storage tanks would be provided by the District from its existing underground water distribution system serving all lands within the District. For VCIP projects on privately-owned lands, water supplies would be provided from groundwater wells or surface water supplies from the landowner.

Telecommunications Facilities

The typical solar facility would include a Supervisory Control and Data Acquisition (SCADA) system to provide monitoring of facility operation and remote control of critical components. The PCSs would be connected by fiber optic or other cabling that would be installed in buried conduit leading to the project substation control house. The SCADA systems would be connected to local telecommunications service via overhead lines or buried lines. Telecommunications may also be transmitted wirelessly via a communications tower up to 125 feet high adjacent to the project substation. The SCADA servers would either be housed on-site in the project substation control house or O&M building or remotely in a cloud-based system.

Meteorological Data Collection System

The typical solar project 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 up to 15 feet above the ground, or about 3 feet above the maximum height of nearby equipment to allow for accurate wind readings. The meteorological data would be transmitted to the facility SCADA system.

Operations and Maintenance Facilities

The typical solar project would include an operations yard, which would provide storage for operational equipment and materials, and provide parking and maneuvering areas for staff vehicles, delivery trucks, and service vehicles. The operations yard would occupy an area of up to 2 acres, and would include a pre-manufactured operations and maintenance (O&M) building with office space for operations and maintenance staff. The yard would also include one or more metal storage buildings or containers for storing spare modules and other materials. The parking area would include up to 10 spaces including one disabled access space.

Potable water would be delivered to each O&M facility by a commercial water delivery service. The typical 250 MW solar plus energy storage facility would include a water storage tank for potable water which would provide for drinking, hand washing, and toilet flushing at the O&M building.

Domestic wastewater disposal would be provided by a septic tank and leach field system located adjacent to each O&M building. The septic system would be designed and constructed in accordance with the Fresno County Local Agency Management Program for Onsite Wastewater Treatment Systems (OWTS). During construction, sanitary needs would be provided by portable chemical toilets which would be serviced as needed by a private contractor.

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Site Access and Internal Circulation

The typical solar project would gain vehicular access from project entrances located on the county road system or on state highways passing through the Plan Area. Permanent access through each project site would be provided primarily by internal driveways within the project's fence line which would run along the site perimeter and across the solar fields. The perimeter driveways and primary internal driveways would be surfaced with decomposed granite while minor driveways would consist of native compacted soil. All internal driveways would be 20 feet wide to allow passage and maneuvering of emergency and maintenance vehicles. The distance between parallel internal driveways would provide sufficient access throughout the project to provide access for emergency vehicles and personnel. The internal driveways would be designed and constructed to have a continually durable dust-free surface, in accordance with the Fresno County Improvement Standards, and would be permeable to allow percolation of rainfall into the underlying soil.

Exterior Lighting

Lighting for the typical solar facility would be designed to provide minimum illumination for safety and security while avoiding direct light spillover onto public roadways or adjacent properties. Low-level lighting would be installed at the entry gates, substation, PCSs, and O&M building. 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 PCSs, which would be activated only when needed by switch or motion sensors. There would be no lighting within the solar arrays, along any internal access driveways, or around the facility perimeter. Light fixtures would be hooded so as to be directed only on-site and away from other properties.

Signage

Project signage would typically consist of identification signs at the permanent project entrances, and safety signage at electrical equipment and at the substation. The signage would identify the project owner, operator, and emergency contacts and provide safety and security information. Additionally, small-scale signage would be posted at the main entry gates and intermittently along the fencing around the PV panels to indicate "No Trespassing" and "Private Property" for security and safety purposes. During the construction phase, temporary directional signage would be employed as needed. All signage would conform to the sign standards of the Fresno County Sign Code.

Perimeter Fencing

Prior to installation of solar arrays, the perimeter of each solar field would be securely fenced and gated to prevent unauthorized access. The perimeter fencing would consist of 6-foot chain-link galvanized metal topped with standard three-strand barbed wire. Fence posts would either be drilled and grouted or 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 project entrances and would remain locked when not in use.

To allow unimpeded passage of kit fox and other local wildlife through the typical solar project site, all security fencing would include a continuous 5-to-7-inch gap between the bottom of the fence and the ground surface. (For a more detailed discussion of this wildlife-friendly fencing, see Section 4.9. *Biological Resources*, under Impact BIO-12.)

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2.5.1.1.2. CONSTRUCTION OF SOLAR FACILITIES

Construction of the typical solar generation facility would involve four major construction phases, as follows:

- 1) Site preparation activities;
- 2) Installation of solar arrays, O&M and related facilities;
- 3) Installation of PCSs and construction of onsite substation; and
- 4) Installation of energy storage systems.

Construction of each typical 250-MW solar facility is expected to occur over an approximately one-year period. This includes 11 months of construction and one month of testing prior to energizing.

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.

Clearing and Grading

Prior to facility construction, the site would be cleared of vegetation, graded, and compacted. Site clearing and soil preparation would occur incrementally as needed, and would not proceed to a new area until that 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 the Plan Area is essentially level, with only agricultural furrows creating minor terrain roughness, solar development can typically be accommodated without mass grading. Grading would balance on-site, and no import or export of soils would be required. Ground preparation would include tilling and grading to smooth out existing agricultural furrows, followed by compaction with rollers. 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. Prior to installation of solar arrays, the perimeter of each array would be securely fenced and gated to prevent unauthorized access.

Construction Staging

The typical 250-MW solar project would include a central staging area for construction management and support, located on approximately 30 acres near a project entrance on a county road or state highway. The staging area would include construction offices, a first aid station, worker parking, equipment storage areas, cleaning and maintenance, and truck unloading area. Portable chemical toilets would provide for sanitary needs and bottled drinking water would be delivered to the site. The staging area would require a power source for temporary lighting, which would be supplied by existing local power distribution lines, with portable generators to provide backup emergency power supply. The staging area would be enclosed by {00081324.1}

security fencing. During construction, additional satellite staging areas may be located within the project site for temporary material storage and assembly.

Temporary Internal Driveways

Construction access through the project 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 include crushed stone and metal riffle plates for removing soil from the wheels of construction vehicles prior to exiting to avoid tracking mud and sediment onto county roads and state highways.

Workforce

During construction, the number of workers on each project site at any given time would fluctuate depending on the construction stage. Workforce numbers would be greatest during the middle of the construction period when all construction stages would overlap to some degree. During this overlapping period, the number of workers would reach a peak of up to approximately 640 workers at each typical VCIP project site during the busiest time of construction.

Typically, construction of solar facilities involves 10-hour working days from Monday through Thursday each week, for a total of 200 working days. The daily hours of construction would be staggered depending on the construction trade, with start times ranging from 5 to 7 AM, and with end of shift times ranging from 2:30 to 5:30 PM. Occasionally, workdays and hours may be extended to complete critical components or to make up for schedule delays caused by bad weather. During the hot summer months some workers (e.g., welders) would arrive earlier and leave around midday. For safety reasons, certain construction tasks, such as final electrical terminations, must be performed after dark when no energy is being produced.

Based on construction observation on other solar projects in the region, it is expected that 25 percent of workers would carpool to and from the typical solar project site. During the peak construction period at the typical project site, the construction workers would generate approximately 480 round trips per day (i.e., 640×0.75 [assuming 25 percent of workers would carpool]). Thus, the commuting construction workers on a 250-MW solar project would generate a total of 960 daily trips (in-bound and out-bound) during the peak construction period. Employee traffic generated during less intensive construction periods would be less (for additional detail see Section 4.16 *Transportation* and Appendix E of this PEIR).

In furtherance of the VCIP's project objective to provide community benefits through job creation and training programs for local residents, the construction workforce for the typical VCIP solar project would be largely drawn from the surrounding communities, with the possible exception of project management personnel. It is estimated that the average round-trip commute length for construction personnel would be approximately 95 miles. Construction workers would park at the on-site construction staging area.

Construction Deliveries

Construction materials, equipment and supplies would be delivered to the typical solar project site by truck. Construction 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, scrapers, dozers, compactors, trenchers, and backhoes, and general construction equipment like concrete mixers, cranes, hydraulic and vibratory pile drivers, forklifts, water trucks, ATVs, pick-up trucks, and generators. This equipment would be brought to the project site when needed and would remain on-site throughout the duration of the activities for which they are needed.

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It is estimated that the typical 250-MW solar project would receive an average of about 40 deliveries per day over the 200-day construction period. Deliveries of solar modules and support structures, electrical components, battery systems, concrete and aggregate would occur throughout the construction period. The equipment and material deliveries would originate in various locations in central California and would follow designated truck routes to travel to the project site. It is anticipated that most deliveries of solar modules, tracking systems, and major electrical components would originate from the Port of Oakland, although some could come from the Ports of LA, Long Beach, and Port Hueneme. It is anticipated that aggregate and concrete supplies would be obtained from the nearest sources, which would vary depending on location of the project site within the VCIP. All other construction deliveries are expected to originate from the Fresno area. Truck deliveries would normally occur during daylight hours, although some offloading and/or transporting would occur on weekends and during evening hours.

Impervious Surfaces and Revegetation

The coverage of the typical solar facility with impervious surfaces is minimal since the solar arrays are elevated above the ground and mounted on racks supported by narrow profile steel posts. Relatively small areas of impervious surfaces would be created by concrete pads and footings for the inverters/transformers, substation, the O&M building, the battery containers, and asphalt pavement for site entrances and parking area. The internal driveways would consist of compacted earth or would be surfaced with decomposed granite or other permeable surface material, and would include no asphalt pavement or other impervious materials. A typical solar project would retain over 90 percent of its surface area in vegetated cover, with about 9 percent covered by pervious internal driveways, and less than 1 percent covered by imperious surfaces.

At each solar facility, the exposed soils would be vegetated to prevent erosion and provide dust control. The exposed areas would be planted with an approved native seed mix that would contain only “low water use” plant species that would not require any irrigation, would discourage weed infestation, and would provide habitat value for native wildlife species. The seeding would be performed by a mechanical seed drill which would plant seeds in a continuous stream in furrows at a uniform rate and at controlled depth and then cover the planted seeds with soil. All planted vegetation would receive sufficient **rainfall** for germination and growth during the winter and spring of each year. The vegetation would senescence (die back) during the summer and fall but would remain in place to stabilize the soil. All planted vegetation would receive sufficient sunlight for photosynthesis. As shown in Figure 2.5-1 Typical Solar Arrays, the rows of solar arrays would be widely separated so that they do not cast shade on each other when the sun is low in the sky in the early morning and late afternoon. When the solar arrays are in the horizontal position (at noon), about 67 percent of the solar field is not covered by solar panels and receives direct sunlight. The areas shaded at noon receive direct sunlight at various times in the mornings and afternoons as the trackers rotate the solar panels to follow the sun across the sky.

If the solar operator elects to utilize grazing to manage on-site vegetation, then the typical solar project site may be revegetated with prescribed seed mix which could serve as forage for sheep grazing. (For purposes of the PEIR analysis, it is assumed that the typical solar project would not necessarily employ sheep grazing, in addition to mechanical means of vegetation control. The potential effects of sheep grazing are considered in the relevant analyses, such as water supply, to disclose potential impacts in cases where sheep grazing may be included in solar facility operations. However, sheep grazing is not assumed in other discussions such as project compatibility with Williamson Act contracts, in order to present the most conservative (i.e., environmentally protective) reasonably foreseeable environmental analysis for each resource area.

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Site Management during Construction

Construction Water Use

During construction, non-potable water would be used for dust control and soil conditioning during earthwork. Based on experience with similar projects, the water demand for preparation and construction of a typical 1,600-acre project site would average 0.15 acre-feet per acre (af/ac), resulting in a total consumption of 240 acre-feet of water during the 12-month construction period. As further described in the Water Supply Assessment included as Appendix F of this PEIR, it is anticipated that water for grading and construction would be obtained from existing agricultural wells on the site or in the vicinity.

Bottled water would be provided to the construction workers for consumption. Sanitary needs during construction would be provided by portable chemical toilets which would be serviced as needed by a private contractor.

Stormwater Management and Erosion Control

During grading and construction, soil stabilization and runoff control measures would be required to prevent erosion and sedimentation. The appropriate measures for conditions within the typical solar project 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 SWPPP 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 project phase. The project SWPPP would be submitted to the State Water Resources Control Board prior to initiation of ground disturbing activities.

Construction Waste Recycling and Disposal

The waste generated during construction would primarily consist of non-hazardous waste materials such as packing containers and materials, waste lumber, wood pallets, scrap metal, glass, plastics, and paper. These waste materials would be segregated on-site for recycling or disposal at a Class III landfill in the region. Consistent with local regulations and the California Green Building Code, the solar project would be required to divert a minimum of 50 percent of construction waste from landfills.

Any waste classified as hazardous such as waste paint, waste solvents, waste oil, degreasing agents, oily rags, concrete curing compounds, adhesives, chemicals, and used batteries would be stored (in an approved storage facility/shed/structure). Hazardous waste generated during construction would be either recycled or disposed of at a Class I disposal facility, as required by state and local regulations.

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2.5.1.1.3. OPERATION OF SOLAR GENERATING FACILITIES

The typical solar generating facility would involve facility operation and monitoring, facility maintenance and management, and implementation of safety and security measures. These are described in turn below.

Facility Operation and Monitoring

Operational activities at a typical 250-MW solar facility would primarily involve monitoring and management of solar generation, which would occur during daylight hours year-round. The project owner would contract with an O&M contractor who would provide operations staff to be stationed at the project O&M facility. Operations staff would manage the facility via SCADA (“Supervisory Control and Data Acquisition”) systems. Operators would monitor and analyze the collected data to determine maintenance needs, respond to automated alerts from the monitoring systems (i.e., in the event of equipment failures or abnormalities), and communicate with customers and transmission facility operators.

Operations and Maintenance Personnel

Up to 5 permanent staff would be on the solar facility site at any given time to perform monitoring duties described above and to conduct visual inspections of equipment, internal roadways, and fencing, and perform maintenance or make repairs, as necessary. Additional workers could be on-site intermittently when equipment needs to be repaired or replaced. Panel washing cycles would involve up to 10 workers for up to 4 weeks per wash cycle, which is expected to occur up to 2 times per year in the summer. During the growing season when sheep may be grazing on site (if the facility operator elects to employ sheep grazing), up to 2 sheep herders could be required to manage the rotation of sheep flocks through the site. At facilities where mechanical mowing and trimming would be the sole means of vegetation management, a staff of 10 would be needed for a period of 4 weeks for each mowing cycle, which would occur twice per year in the winter and spring. It is anticipated that the typical 250-MW solar project would have 5 permanent operations staff and a maximum of 10 additional staff on any given day (the panel cleaning and mowing workers would not overlap). Thus, there would be a maximum of 15 personnel on-site on any given day. On projects that also include on-site ESS facilities, up to five additional permanent operating staff would be needed, bringing the total to maximum of 20 workers on-site at any given time. On average, the typical 250-MW solar and BESS facility would have about 15 workers on site per day.

Vegetation Management

Upon the completion of construction within a given area of a potential VCIP project, the exposed soil would be revegetated through seeding with slow-growing grasses, with the entire site completely or substantially revegetated upon completion of construction (see “Impervious Surfaces and Revegetation” above). Vegetative cover would be kept low (typically no taller than 6 inches) 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, as well as access for maintenance and panel washing vehicles.

The project site vegetation would be kept low primarily by mechanical means (e.g., mowing, trimming, hoeing) where needed, but could also involve sheep grazing at the facility operator’s discretion. The net vegetated area potentially subject to grazing would be approximately 1,400 acres on a typical 1,600-acre site. The sheep grazing would be managed and controlled by temporary sheep enclosures (i.e., plastic fencing) which would be moved progressively through the project site. Grazing would occur from January until the end of the growing season in May, at which time the sheep would be removed.

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Weed and Pest Control

The typical VCIP solar project would include implementation of a Pest Management Plan (PMP), as required by Fresno County or other applicable approving agency. The PMP would be directed toward prevention and control of infestations by weeds, insects, disease, and vertebrate pests. The PMP 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 consist of a combination of methods, including the use of weed-free seed mixes for site revegetation, and keeping vegetation low through mechanical methods such as mowing, trimming, and hoeing, and potentially sheep grazing at the facility operator's discretion. Herbicides would be used only selectively where needed using low-impact chemicals and practices that minimize impacts to protected biological species.

The PMP would specify measures to prevent infestation 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 preventive measures such as vegetation management (described above) to avoid impacts to protected wildlife species. Natural or ecological control through predation by hawks 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.

Fire Safety

The typical solar/BESS project would include a number of design and operational measures for fire prevention and suppression. Design measures 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 (CO₂) fire extinguishers would be mounted at the inverter/transformer pads throughout the project. Employees would be required to be familiar with the use of fire safety equipment, and smoking would be permitted only in designated areas.

The BESS within the solar facility would consist of a number of prefabricated electrical enclosures containing battery banks and associated switchboards, inverters, and transformers (see Figure 2.5-4). All battery containers would be installed on concrete foundations. The enclosures would have appropriate fire suppression and safety systems in compliance with UL standard 9540, *Standards for the Installation of Stationary Energy Storage Systems*. The batteries and containers would also have to comply with UL 9540A fire test criteria which require battery fires to be contained within a single container. Each energy storage unit used on site would be designed in compliance with the most up-to-date version of the California Fire Code section 1207 *Electrical Energy Storage Systems (ESS)*, which has been adopted as part of the Fresno County Fire Code to minimize risk of fire from stationary storage battery systems and contain fire in the event of such an incident. (For a detailed discussion of potential fire risk associated with BESS and a description of the fire standards and codes that address it, see Section 4.9. *Hazards and Hazardous Materials*, under Impact HAZ-2.) In the unlikely event of battery fire, water for fire suppression would be obtained from an on-site water tank with storage capacity as specified by the Fresno County Fire Protection District (FCFPD), which would also specify minimum fire flows. For potential VCIP projects on lands currently owned by the District, water supply for the on-site storage tanks would be provided by the District from its existing underground water

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distribution system serving all lands within the District. For VCIP projects on privately-owned lands, water supplies would be provided from groundwater wells or surface water supplies from the landowner.

Hazardous Materials and Hazardous Waste Management

The operation and maintenance of the typical solar facility would involve the use of small quantities of hazardous materials such as diesel fuel, gasoline, motor oil, mineral oil in transformers, various solvents and detergents, and lead acid-based batteries used for emergency backup, and lithium-ion batteries used in the ESS.

Hazardous materials and waste would be managed, used, handled, stored, and transported in accordance with applicable local and state regulations. All hazardous materials would be handled, stored, and disposed of in accordance with a Hazardous Material Business Plan (HMBP). Spill prevention and containment would adhere to the requirements set forth in the approved HMBP.

Security

The perimeter of the typical solar facility would be securely fenced and gated to prevent unauthorized access, as described under “Perimeter Fencing” above. The facility operator would contract with a private security company to provide security services during construction and operation. Electronic surveillance equipment such as infrared security cameras and motion detectors would be installed around the solar facility, with video feeds transmitted in real time to the off-site security contractor for monitoring. In the event the surveillance system detects a breach, a security representative would be dispatched to the site, as needed, and the County Sheriff’s office would be notified as appropriate. Experience on previous solar projects in the District indicates that the presence of on-site security staff during construction virtually eliminates the incidence of theft and vandalism at the sites. During project operations, the presence of on-site security staff during all off hours (evenings and weekends) likewise virtually eliminates the incidence of theft and vandalism at the facilities (Biller 2025).

Solar Module Cleaning

The PV modules would be washed periodically to remove dust 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 occur 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 two 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 from one complete cycle of panel washing would be approximately 2.5 acre-feet for each 250 MW project based on the usage rate reported for the 250-MW Aquamarine Solar Facility, which is part of the Westlands Solar Park in Kings County. Two panel cleaning cycles per year would use approximately 5.0 acre feet of water (AFY) to clean all panels associated with the typical 1,600-acre project site. As further described in the Water Supply Assessment included as Appendix F of this PEIR, a water requirement is well under the District’s maximum allowance of 5 AFY per 160 acres for M&I uses associated with solar projects. It is noted that panel cleaning at the Aquamarine Solar Facility was conducted twice in 2022, and only one time each year in 2023 and 2024. It is anticipated that only one panel washing cycle per year would be needed, except in very dry years, like 2022, when up to two panel cleaning cycles may be needed (Biller 2025).

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Overall Operational Water Demands

At the typical VCIP solar/BESS facility, general operational activities, such as washing or rinsing equipment, etc., are estimated to require 24,000 gallons (0.074 acre feet) of non-potable water annually. This is based on consumption rate of up to 2,000 gallons per month reported for the Aquamarine Solar Facility (Biller 2025).

Assuming the typical solar project employs sheep grazing for vegetation control, the sheep used for grazing would each require up to 3 gallons of water per day. Assuming a sheep grazing density of 0.5 sheep per acre over approximately 1,400 acres to be grazed, a total of 700 sheep would be employed. During a 5-month (151-day) grazing period (January through May), the total water requirement for sheep watering would be 317,100 gallons, or 0.97 AFY per project site.

As discussed above, the washing of solar modules on each typical 1,600-acre project site would use up to approximately 5.0 AFY, based on two washing cycles per year.

Based on the annual water consumption estimates provided above, the combined operational water use by a typical 250-MW facility for panel washing (5.0 AFY), sheep watering (0.97 AFY), and general operational uses (0.074 AFY) would total approximately 6.05 acre-feet of water annually over the 1,600-acre project site. This is equivalent to 0.004 acre-feet per acre, or 0.6 acre-feet per quarter-section (160 acres).

Operational water supplies would be obtained from various sources depending on land ownership. For potential solar facilities on lands leased (or with easements) from private landowners, operational water would be provided from the landowners' retained eligibility for surface and groundwater allocations, or would be obtained on the open market and wheeled through the District's water distribution system. For potential solar facilities on lands currently owned by the District (whether leased, transferred, or with easements from the District), the District would provide operational supplies through its existing system of lateral pipelines for conveyance of imported surface water.³ The District has established an annual allocation of water deliveries for PV solar projects which do not qualify for surface or groundwater allocations, as is the case with lands owned by the District. Solar PV facilities on District-owned lands are eligible to receive up to 5.0 acre-feet per quarter-section per year for operational uses. As noted above, the operational water usage rate at a typical 250-MW solar facility is estimated to be 0.67 acre-feet per quarter-section per year, which is well within the District's maximum annual allowance of 5.0 acre-feet per quarter-section.

Small quantities of potable water would be required at the solar facilities for domestic uses. Potable water would be delivered to the facility by a commercial water delivery service. The typical 250 MW solar plus energy storage facility would include a water storage tank for potable water which would provide for drinking, hand washing, and toilet flushing at the O&M building. The water tank would be refilled regularly at a rate of approximately 5,000 gallons (0.015 AF) per month (i.e., the capacity of a standard water tanker truck), for a total of approximately 0.18 AFY at each typical 250-MW project site and 16 AF per year for full VCIP implementation. (This compares with total non-potable operational water use of approximately 508 AFY for all VCIP facilities at full buildout. Given the small quantities of potable water that would be required and multiple water delivery services within the vicinity of the Plan Area, there are sufficient supplies to meet all potable water demands.

³ Because District-owned lands are no longer irrigated, these lands will be subject to the same restrictions and are ultimately treated the same for the purposes of this analysis – regardless of whether they leased by the District or transferred during potential implementation of the VCIP. As such, these lands are simply referred to as “District-owned lands” throughout this PEIR.

2.5.1.1.4. DECOMMISSIONING AND SITE RECLAMATION

At the end of its useful life after approximately 35 years of operation, it is anticipated that the typical solar facility would be decommissioned, and the site would be reclaimed in accordance with an approved Reclamation Plan.

Decommissioning would begin with removal of the solar modules, which would be recycled or disposed of as e-waste. The racks and trackers would be disassembled, and the steel posts supporting the racks would be removed. Site infrastructure would be removed, including inverters, transformers, each site's substation, battery containers, as well as all electrical cables, concrete pads, fences, and other related equipment and material. The demolition debris and removed equipment may be cut or dismantled into pieces that can be safely lifted or carried by standard construction equipment. Project internal driveways would be restored to their pre-construction condition unless they are needed for subsequent land use, to be determined through subsequent planning and environmental review. Equipment and materials would be reused and/or recycled to the extent practicable. Upon complete removal of equipment and salvageable material, the site would be cleared of any remaining trash and debris.

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) which would be required for decommissioning. Water for dust suppression would also be required, with the overall volume and sources of water required expected to be similar to the volume used during construction.

After the last remnants of the solar facility are removed and hauled off-site, the land would be tilled to restore the topsoil to a density and consistency suitable for farming. Finally, the site would be reseeded with an appropriate weed-free seed mix to provide soil stability and moisture retention prior to the resumption of farming or grazing.

It is expected that the decommissioning of the typical solar facility would involve a similar or lower level of activity than the original project construction. Decommissioning may involve less equipment use and fewer haul truck trips, and the time required for decommissioning may be less than the duration of the original project construction.

2.5.1.2. STAND-ALONE ENERGY STORAGE FACILITIES

As an alternative to co-locating and integrating the potential BESS facilities with the potential solar facilities, the VCIP also contemplates stand-alone energy storage facilities (with a total storage capacity of up to 10,000 MW) which would operate independently of solar generation facilities, and which would occupy a total combined land area of about 500 acres. These facilities would provide storage for excess solar power generated at off-site solar facilities during low grid demand periods, and would dispatch the stored power to the electrical grid when needed. The battery storage units would be the same or similar to those included within solar facilities as described in Section 2.5.1.1 (See Figure 2.5-4 for illustration of a typical energy storage facility.) It is noted that while the VCIP contemplates up to 10,000 MW of stand-alone energy storage facilities, it is possible that the total overall energy storage capacity of stand-alone facilities that is ultimately installed in the Plan Area may be substantially less than this, but is unlikely to be greater.

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It is anticipated that the typical stand-alone energy storage facility would occupy up to 50 acres and provide up to 1,150 MW of storage, at 4 hours per MW, for a total storage capacity of 4,000 MW hours (MWh). The locations of these stand-alone energy storage facilities have not been determined, but it is anticipated that they would be dispersed throughout the Plan Area and located near the five VCIP collection substations described below. The energy storage systems would use one or more proven battery storage technologies such as lithium-ion, iron-flow, sodium-sulfur, or vanadium-redox-flow batteries, and could potentially include flywheel banks housed in electrical enclosures. Emerging storage technologies which could be employed include sodium-ion and zinc batteries. Currently, the most common energy storage technology is lithium-ion batteries. (For purposes of the PEIR analysis, it is assumed that lithium-ion battery storage would be utilized although other proven or emerging technologies mentioned above could also be employed. The PEIR discussion will note differences in impacts associated with the different storage technologies, as appropriate.) The battery storage units would consist of metal containers 40 feet long by 8 feet wide by 8.5 feet high. Each storage unit would be self-contained and would include battery racks, switchboards, integrated HVAC units, and inverters. Transformers would be located outside the battery storage containers, and each transformer would serve up to four containers. In some energy storage systems, the inverters are co-located with transformers outside the containers.

The prefabricated electrical enclosures containing battery banks and associated switchboards, inverters, and transformers would have appropriate fire suppression and safety systems built to code and in compliance with UL standards as described above. The final design would include containment features to prevent the escape of liquids or spills from the energy storage site. Each energy storage unit used on site would be designed in compliance with the California Fire Code, which has been adopted as the Fresno County Fire Code, which would minimize risk of fire from stationary storage battery systems and contain fire in the event of such an incident. (For a detailed discussion of fire risk associated with BESS and a description of the fire standards and codes that address it, see Section 4.9. *Hazards and Hazardous Materials*, under Impact HAZ-2.)

On-site support facilities for the typical energy storage facilities would include a substation, a SCADA system, access roads, security lighting and fencing. The energy storage containers and transformers would be founded on concrete pads, or could utilize foundation systems consisting of concrete piles and steel beams. The areas between the containers would be surfaced with crushed aggregate.

Construction of a typical 1,000 MW energy storage facility would be completed in about 12 months (200 workdays) and would involve 95 workers on average and 110 workers during peak construction periods. These workers would be drawn from the surrounding communities and would have an average roundtrip commute of about 95 miles. Construction would involve approximately 1,840 truck deliveries, including 2,000 for battery containers, transformers, substation equipment, and construction equipment, 4,400 for aggregate, and 400 for concrete. On average, the energy storage facility would receive about 34 truck deliveries per day over the 200-day construction period.

Water consumption rates during construction of stand-alone energy storage systems would be similar to that for solar/BESS facilities. At a demand rate of 0.15 AF per acre, the typical 50-acre energy storage site would require a total 7.5 acre-feet of water for dust suppression and soil conditioning during the 12-month construction period for each site.

Construction of the energy storage facilities would be subject to the same site management requirements as the solar generating facilities described in Section 2.5.1.1.2 above. This would include preparation and

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implementation of SWPPPs for storm water management and erosion control, management of waste disposal and recycling, and hazardous materials management.

Operation of the energy storage facilities would be similar to solar generating facilities as described in Section 2.5.1.1.3., except there would be no maintenance of solar arrays. The operation of a 1,000 MW energy storage project would be similarly managed by a SCADA system, with about 20 permanent staff to manage operations. Similar vegetation, pest control, and waste management requirements would apply, as would hazardous materials and fire safety protocols. Security measures would also be similar and would include electronic surveillance and off-site monitoring.

Water consumption rates during operation would be lower than solar facilities since there would be no need for panel washing or sheep grazing.⁴ Based on consumption rates at other energy storage facilities, the typical 50-acre energy storage project would require approximately 1,000 gallons (0.003 AF) of water per year (Fresno County 2023d).

Decommissioning of the energy storage facilities would involve many of the same steps as solar generating facilities, as described in Section 2.5.1.1.4 above. Decommissioning would involve complete removal of all project components, including battery containers, transformers, gravel, concrete, asphalt, and underground conduits, followed by restoration of the site to pre-project conditions, as required by a Reclamation Plan approved by Fresno County.

2.5.2. Infrastructure Plan

The components of the Infrastructure Plan include: (1) gen-tie lines; (2) collection substations; and (3) transmission lines within the VCIP. Each of these components is described in turn below.

2.5.2.1. GEN-TIE LINES

2.5.2.1.1. DESCRIPTION OF GEN-TIE LINES

The renewable power from the solar generating and energy storage facilities would be transferred to double-circuit 230-kV gen-tie lines which would convey the power to one of five collection substations located on the backbone transmission collection line within the VCIP. As noted previously, the gen-tie lines would branch out from each of the five collection substations to serve the solar and energy storage facilities in the vicinity. Each gen-tie line would have a transmission capacity of approximately 1,000 MW, so that four gen-tie lines would be needed to deliver power to each of the five collection substations, which would each have capacities of approximately 4,000 MW, on average. The gen-tie lines would extend from 10 to 50 miles from the nearest collection substation depending on the location of the solar or energy storage facility to be served. It is estimated that approximately 260 miles of gen-tie line would be needed to serve the VCIP solar and energy storage facilities. It is anticipated that the gen-tie lines would be constructed at a pace of about 26 miles per year, on average, over the 10-year buildout period.

⁴ Sheep grazing would not be feasible on the stand-alone BESS project sites because the energy storage containers would be founded on concrete pads and would not be vegetated like the areas beneath potential solar arrays. {00081324.1}

The tower structures of the gen-tie lines would consist of self-supporting tubular steel poles (TSPs or monopoles)(see Figure 2.5-5). (Although four-legged steel lattice towers have been traditionally utilized for transmission lines, monopoles are currently favored due to their reduced cost [which is now comparable to lattice towers], their unobtrusive visual profile, and because they are highly suitable for flat terrain with deep soils, as occurs throughout the Plan Area.) The tower-to-tower spans would be as short as 800 feet, and the monopoles would range in height from 100 to 180 feet depending on location and span distances between monopoles. It is estimated that the VCIP gen-tie lines would include a total of up to 2,000 monopoles (i.e., 7.7 towers per mile, which includes one extra pole per mile to account for double poles needed at turning and crossing points).

The monopoles would consist of two main types of structures. Heavier and stronger monopoles would be installed at both ends of each gen-tie line, and at overcrossings at county roads, state highways, and the Aqueduct, and also at turning and crossing points in the gen-tie alignments. These heavier monopoles would be bolted onto steel-reinforced concrete piers which would be cast in place in excavated holes in the ground. The concrete footings would be up to 35 feet deep and up to 8 feet in diameter. The remainder of the monopoles would consist of lighter poles which would not have concrete footings but would instead include a solid steel bottom section which would be imbedded directly into the ground to a depth of up to 25 feet. It is estimated that about one-third of the monopoles (666 poles) would consist of heavier structures founded on concrete footings, with the remaining two-thirds (1,334 poles) consisting of lighter-duty structures imbedded directly into the ground.

The monopoles would carry conductors (“wires” or “cables”), insulators, and ground wires for two electrical circuits. Each circuit would consist of three phases, which would be carried on separate conductor cables arranged in a horizontal pattern. The two circuits would be installed from arms extending from both sides of the poles. Conductors must meet minimum ground clearances (at the bottom of the conductor sag), typically 27 to 30 feet above the ground. To protect conductors from the hazard of direct lightning strikes, overhead ground wires (shield wires) or fiber optic ground wire would be installed on top of tower structures to transfer lightning currents into the ground.

2.5.2.1.2. CONSTRUCTION OF GEN-TIE LINES

This section describes the construction of 26 miles of double-circuit 230-kV gen-tie line, representing the annual average of gen-tie line anticipated to be constructed over the 10-year VCIP buildout period.

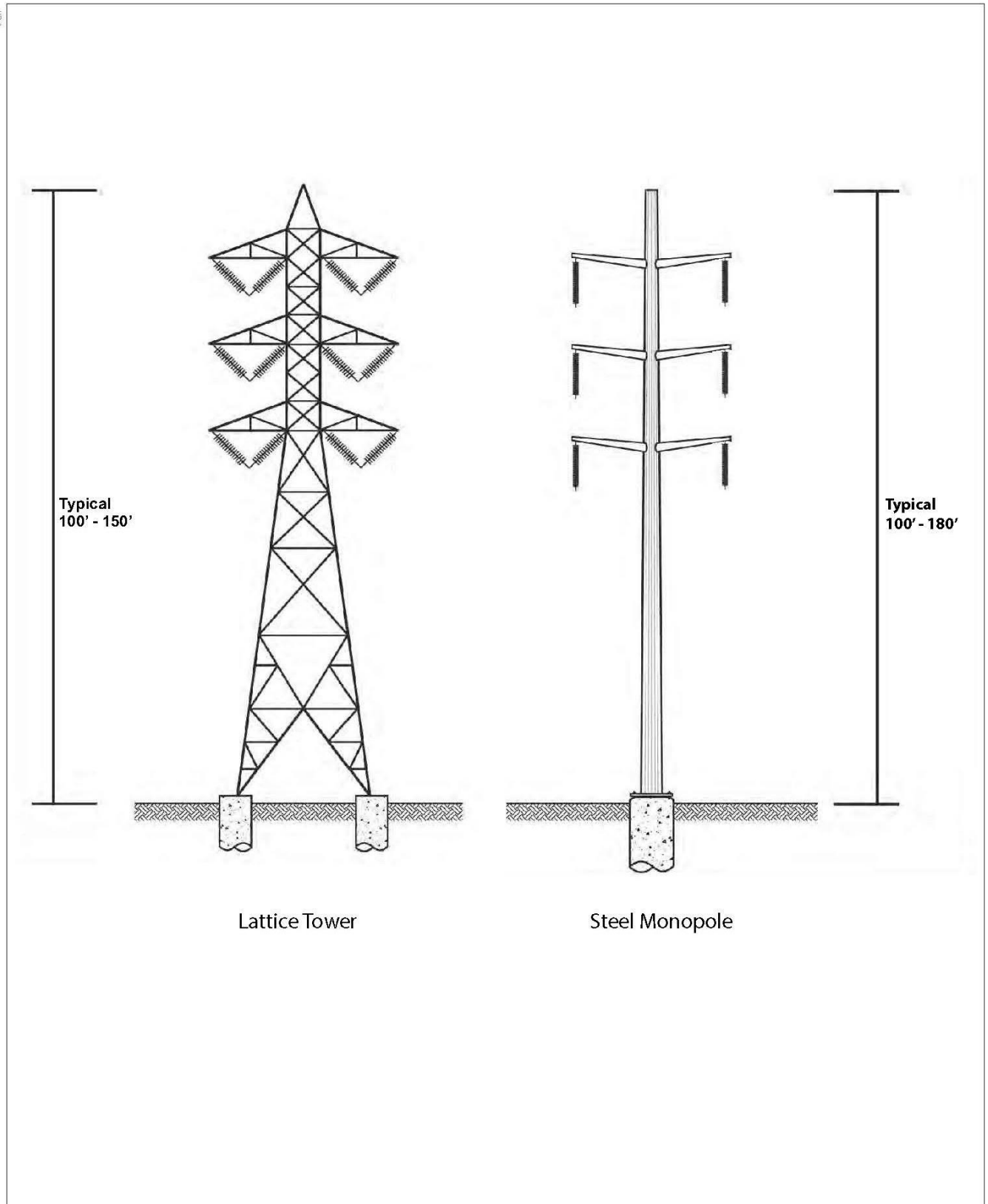
Construction Overview

It is estimated that the construction of the average 26-milelong gen-tie line to the nearest collection substation would be completed in approximately 6 months (100 working days). The construction of the gen-tie line would include the following general sequence of activities: right-of-way acquisition; surveying and pre-construction activities; preparation of the staging area; clearing of tower sites; tower installation; conductor installation; installing substation tie-ins; and site reclamation. Each of these activities is described below.

Right-of-way Acquisition

Although much of the gen-tie line rights-of-way would be on lands within the Development Focus Areas (i.e., lands owned by the District or participating private landowners), some gen-tie segments would need to be routed over privately-owned farmland outside the DFAs, and thus would require the acquisition of right-of-way (ROW) from the landowners.

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Typical 230-kV Transmission Towers
Figure 2.5-5

The ROWs would be in the form of easements, which would allow agricultural activities to continue within the right-of-way. The easement width for the gen-tie lines would range from 175 to 350 feet.

Surveying and Pre-Construction Activities

Construction survey work would consist of locating the centerline, tower locations, ROW boundaries, and temporary disturbance areas for pulling and tensioning activities, and temporary tower access roads. Once the centerline and disturbance areas have been surveyed and clearly marked in the field, preconstruction surveys for biological resources would be conducted. Geotechnical investigations would also be conducted to determine soil densities and strength for use in soils engineering and structural design.

Construction Access

Each tower site would require vehicular access during construction, and also during gen-tie line operation to allow access for inspection and maintenance. It is assumed that the gen-tie alignments would be designed to follow the existing county roads and farm roads, therefore few if any new access roads are anticipated to be needed.

Clearing Gen-Tie Right-of-Way

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. Within the gen-tie rights-of-way, it is anticipated that existing orchard trees and vineyards would need to be cleared from the tower installation sites and from planned pulling and tensioning sites.

At the tower sites, temporary clearance areas for construction of the monopoles would typically require a 90 foot by 90-foot area, or 8,100 square feet (0.2 acres) at each monopole site. Pulling and tensioning sites would be spaced about one mile apart along the gen-tie line (i.e., approximately 26 pulling and tensioning sites on along each gen-tie line). Each pulling and tensioning site would typically require an average of 4 acres for equipment maneuvering. Within gen-tie segments outside the DFAs, the landowners would be compensated for any loss or damage to crops as part of their easement agreements, and could replant the temporary clearance areas after completion of the gen-tie line. (Estimates of temporary and permanent land disturbance associated with gen-tie construction are contained in Table 2.5-1.)

Construction Staging Area

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., conductor reels, structure hardware, etc.), construction equipment and vehicles, parking areas for crew vehicles, temporary construction offices, and portable sanitation facilities. The sections of the steel towers would be delivered directly to their pole locations and would not be stored at the staging area. It is anticipated that the typical staging for the gen-tie construction would require a 5-acre site.

Tower Installation

The first step in tower installation would be to prepare a cleared work area at the tower site to accommodate the construction of the tower footings, laydown areas for tower segments, work areas for the assembly of the tower structure, and sufficient area to allow necessary crane maneuvers for tower installation. As mentioned,

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a temporary cleared work area of up to 0.2 acres would be required for a typical monopole site. The sites would be cleared, graded, and compacted where necessary to accommodate heavy vehicles.

As noted, the monopoles would consist of two main types of structures. At turns in the gen-tie line and at road crossings, heavier and stronger monopoles would be bolted onto steel-reinforced concrete piers which would be cast in place in excavated holes in the ground. The concrete footings would be up to 35 feet deep and up to 8 feet in diameter. The remainder of the monopoles would consist of lighter poles which would not have concrete footings but would instead include a solid steel bottom section which would be imbedded directly into the ground to a depth of up to 25 feet. Approximately one-third of the monopoles would consist of heavier structures founded on concrete footings, with the remaining monopoles consisting of lighter-duty structures imbedded directly into the ground. The average 26-mile gen-tie line would include a total of 200 monopoles (at 7.7 per mile), including 66 large monopoles and 134 lighter duty poles.

For the larger monopoles, 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 load requirements and soil characteristics, an average of 65 cubic yards (cy) of concrete is estimated to be required at each tower site to install footings or piers (based on a diameter of 8 feet and an assumed footing depth of 35 feet including 2 feet above ground). Once the concrete has cured, the towers would be bolted to the piers. Sections of pole would be hauled to each tower site and lifted into place with a crane and bolted together.

As mentioned, the lighter-duty monopoles would be imbedded directly into bored holes to a depth of up to 25 feet. The buried portions of these structures would consist of thicker steel to provide ballast and would be pre-treated to resist corrosion. These monopole foundations would require no concrete. The soil excavated from all of the foundation holes would be distributed over the adjacent lands and would not be exported from the tower sites.

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 a permanent clearance area, would measure approximately 30 feet by 30 feet and occupy an area of up to 900 square feet (0.02 acres). Upon completion of each segment of gen-tie line, the areas disturbed during construction would be restored as appropriate to allow for resumption of cultivation of row, tree, and other crops, if applicable.

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. 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. The stringing of pilot lines would be performed by helicopter for all monopoles, and boom lifts or aerial man lifts would be used to complete the connections of the conductors to the monopoles.

Conductors and ground wires would be strung and tensioned 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 one mile apart and would each temporarily occupy areas of about 4 acres. It is anticipated that these stringing equipment sites would mainly be located within the gen-tie easements. In locations where the gen-tie alignment changes course, the pulling and tensioning sites could extend beyond the gen-tie corridor at these angles or corners, but would not extend more than 800 feet from

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the easement. As with the monopoles, the precise locations and dimensions of the pulling and tensioning sites would be determined at the engineering design stage.

Helicopter services for stringing of the pilot lines would be obtained on a short-term contract basis from an aviation firm in the region. It is expected that the helicopter would depart and return to its home base daily and that temporary landing zones to serve the gen-tie projects would not be required.

The gen-tie lines will need to cross over existing physical features and infrastructure such as roads and highways, canals, and electrical distribution lines. To protect these underlying features during conductor stringing, guard structures would be installed to intercept any falling 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.” 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. Guard structures would be designed and installed in accordance with applicable safety requirements. At each crossing location, the guard structure would be removed once the overhead conductors have been secured to towers. Encroachment permits would be obtained from Fresno County and Caltrans for the public road and highway crossings, and encroachment permits for the power line crossings would be obtained from the PG&E. Encroachment permits would also be required for any crossings of the San Luis Canal/California Aqueduct, to be issued by the United States Bureau of Reclamation (USBR) or the California Department of Water Resources (DWR) as applicable.⁵ The encroachment permits would include conditions regarding safety measures and traffic control.

Site Management during Gen-Tie Construction

Dust Control

During construction, water trucks would be used for regular application of water to minimize dust generation. Gen-tie construction would include compliance with the fugitive dust measures specified in a Dust Control Plan approved by 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 Plan (SWPPP) required for each gen-tie project 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.

Construction Waste

During construction, the waste generated would primarily consist of non-hazardous waste materials such as waste lumber, scrap metal, green waste, and common trash. These waste materials would be collected and

⁵ While outside the scope of this CEQA analysis, it is anticipated that USBR would issue encroachment permits under NEPA Categorical Exclusion 516 DM 14.5(D)(10), which applies to the issuance of permits, licenses, easements, and crossing agreements which provide right-of-way over BOR lands where the action does not allow for or lead to a major public or private action.

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taken to the main construction staging yard where they would be segregated for recycling or disposal at the appropriate facilities.

Some quantities of hazardous waste would be generated during construction. These waste materials would include fuels, lubricants, and cleaning solvents, etc. Hazardous waste 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 gen-tie lines would result in temporary and permanent land disturbance at tower locations and in temporary land disturbance at work sites and staging areas. Table 2.5-1 on the next page contains estimates of land areas that would be permanently and temporarily disturbed. These estimates include the entire 260 miles of gen-tie line anticipated for the VCIP.

Upon completion of each segment of gen-tie line, the areas disturbed during construction would be restored as appropriate to allow for resumption of cultivation of row, tree, and other crops, if applicable.

Construction Workforce and Equipment

Workforce

The average 26-mile gen-tie line segment is expected to be constructed over a 6-month period (100 workdays) and have an average workforce of approximately 40 construction workers on any given day, with a peak of 50 workers on the busiest days. It is expected that most of the 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 provided with per diems to pay for lodging in local hotels or other rental accommodations.

TABLE 2.5-1
VCIP GEN-TIE LINES – LAND DISTURBANCE ESTIMATES¹

Gen-Tie Project Feature	Quantity	Land Disturbance (Acres)		
		Total Disturbance Area	Temporarily Disturbed/ To be Restored	Permanently Disturbed
Tower Sites	2,000 ²	400 ³	360	40 ⁴
Pulling/Tensioning Sites	260 ⁵	1,040 ⁶	1,040	0
Staging/Material Storage Sites	26	104	104	0
Totals	--	1,544 ac.	1,504 ac.	40 ac.

Footnotes:

¹ Total length of gen-tie corridor within the VCIP is estimated to be 260 miles.

² Monopoles would be spaced about 800 feet apart; or 6.6 monopoles per mile, plus 1 extra pole per mile for turning points.

³ Temporary disturbance area at each monopole site = up to 0.2 acres (8,100 sf), i.e., temporary clear areas = up to 90 X 90 feet.

⁴ Permanent disturbance area at each monopole site = 0.02 acres (900 sf), i.e., permanent clear areas = 30 X 30 feet.

⁵ Pulling/Tensioning sites are one mile apart.

⁶ Pulling/Tensioning sites estimated to disturb an average of 4 acres each.

⁷ One staging site per 10 miles of corridor over 260 corridor miles. Each staging site is 4 acres.

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During the 100-day construction period, the work activities would be distributed along the gen-tie line, with various crews engaged in surveying, ROW clearing, pole foundation installation, tower assembly and erection, conductor installation, and reclamation. Although some ridesharing would occur, it is assumed that all construction workers would be solo commuters. Assuming that all 40 workers would commute solo, the peak daily traffic generated by construction personnel would be 40 AM trips and 40 PM trips.

Typically, gen-tie construction would take place in 10-hour shifts between the hours of 6 AM and 5 PM, Monday through Thursday, although work could take place outside these hours if needed. For example, crossings over public roadways may be scheduled during nighttime hours to minimize traffic disruption. For any work taking place after dark, night lighting would be required for safe working conditions, but the lights would be directed toward the work areas.

Construction Deliveries

Equipment and Materials

The construction of the average 26-mile gen-tie line is expected to use approximately 60 pieces of construction equipment and support vehicles at various stages of construction. This would include equipment such as graders, back-hoes, bobcats, auger trucks, concrete mixer and pump trucks, cranes, aerial lifts, forklifts, puller trucks, tensioner trucks, winch trucks, bucket trucks, water trucks, fuel trucks, skip loaders, tractor trailer trucks, pick-up trucks/crew cabs, compressors, and generators. Equipment deliveries would include approximately 24 flatbed deliveries of small equipment, plus 24 deliveries of large mobile equipment, and 15 pickup trucks and crew cabs. In total, there would be about 48 deliveries of construction equipment, plus 15 pickup trucks.

Deliveries of power poles, hardware, conductor spools, concrete, and equipment would occur throughout the construction period. Consistent with the VCIP's objective to provide community benefits, equipment and materials would be procured from existing local businesses and vendors and would originate from various locations in central California. These deliveries would utilize regional highways and local roads to reach the gen-tie corridor.

Concrete and Monopole Deliveries

Concrete would be delivered to pole sites by concrete mixer trucks for pouring of the tower footings. It is expected that concrete would be provided by the nearest supplier depending on location within the VCIP. It is estimated that an average of 65 cubic yards (cy) of concrete would be required at each of the 66 poles with concrete foundations, for a total of approximately 4,290 cy of concrete. Given a concrete mixer truck capacity of 10 cy, a total of 430 concrete deliveries would occur. Deliveries of monopole sections, conductors, insulators, and other hardware would involve a total of approximately 800 deliveries, based on 4 deliveries for each of the 200 towers. In total, the construction of an average 26-mile gen-tie line would involve approximately 1,278 deliveries of equipment, components and materials, or an average of 12.8 deliveries per day over the 100-day construction period.

2.5.2.1.3. OPERATION AND MAINTENANCE OF GEN-TIE LINES

After completion, the gen-tie line would be inspected, maintained, and repaired in accordance with the applicable regulatory requirements. Gen-tie components would be inspected at least once per year for corrosion, equipment misalignment, loose fittings, and mechanical problems. Vegetation, landscaping, and

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

2.5.2.1.4. DECOMMISSIONING AND RECLAMATION OF GEN-TIE LINES

At the end of the useful life of each solar generating facility and energy storage facility, the facility site would be decommissioned and reclaimed as described in Section 2.4.1.14. Each gen-tie line may serve several solar and/or energy storage facilities which may be decommissioned at different times depending on when they were constructed and remaining time on their power and energy sale agreements. Once all the facilities served by a gen-tie line have been decommissioned and the gen-tie line is de-energized, it would be decommissioned unless it is needed for another purpose as determined by the gen-tie owner and approved by the governing agency. Decommissioning would involve the dismantling and removal of conductors, insulators, and hardware from the right-of-way. Tower structures would be removed, and foundations removed down to at least 5 feet below the ground surface. Dismantled materials would be salvaged for reuse, or recycled, or hauled to an approved landfill site for disposal. The gen-tie corridor would then be reclaimed and restored to pre-project conditions, in accordance with an approved Reclamation Plan. The decommissioning activities would generally follow those described for the solar facilities in Section 2.4.1.1.4.

2.5.2.2. VCIP COLLECTION SUBSTATIONS

The Infrastructure Plan includes five large collection substations which would be evenly distributed from north to south along the backbone transmission corridor at approximately 15-mile intervals. These 500/230-kV substations would serve as collection points for power generated in the surrounding DFAs as received from the gen-tie network and would provide interconnection to the state and federal power systems. The substations would step-up the collection voltage from 230- to 500-kV for transfer to the electrical grid (see Figure 2.5-6).

It is expected that each collection substation would accommodate approximately 4,000 MW of solar generation. Each collection substation is anticipated to have a footprint of up to 60 acres, to be located within larger site of about 160 acres which would provide sufficient buffer area to accommodate the convergence of incoming gen-tie lines from the nearby solar generation and energy storage facilities.

Each collector substation would include several circuit positions, which would each include steel support structures, bussing, transformers, circuit breakers, disconnect switches and associated equipment, and a relay house and control house containing control and protective relaying equipment, and security systems. The station yards would be graded to maintain positive drainage, with stormwater basins constructed if needed to prevent runoff from leaving the station sites. The substation sites would include paved internal access roads, and unbuilt areas of the station yards would be covered with crushed-rock aggregate. The tallest structural elements within substations would be dead-end structures up to 140 feet high. Each dead-end structure would require foundations excavated to a depth of 20 feet or more. The substations would be enclosed by an 8-foot high concrete/masonry wall for security.

Construction of the collection substations would involve site clearing and grading of access road, installation of concrete foundations and steel support structures, installation of below- and above- ground electrical conduits and grounding conductors, and installation of control and relay houses.

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VCIP



Typical 500/230-kV Collector Substation
Figure 2.5-6

The construction of each collection substation would take about 24 months (400 workdays) and would involve 80 workers on average and 100 workers during peak construction periods. These workers would be drawn from the surrounding communities and would have an average roundtrip commute of about 95 miles. Construction of each collection substation would involve approximately 2,620 truck deliveries, including 140 for construction equipment, 480 for structures and electrical components, 400 for concrete, and 1,600 for aggregate. On average, each collection substation would receive about 6.6 truck deliveries per day over the 400-day construction period.

Water consumption rates during construction would be similar to solar facilities. At a demand rate of 0.15 AF per acre, the typical 60-acre collection substation site would require 9.0 acre-feet of water for dust suppression and soil conditioning.

Construction of the collection substations would be subject to the same site management requirements as the solar generating facilities described in Section 2.5.1.1.2 above. This would include preparation and implementation of SWPPPs for storm water management and erosion control, management of waste disposal and recycling, and hazardous materials management.

Operation of the collector substations would be similar to the operation of the project substations at the solar facilities as described in Section 2.5.1.1.3. The operation of the collector substations would be similarly managed remotely by SCADA systems, and no permanent staff would be required to manage the facility operations. Similar vegetation, pest control, and waste management requirements would apply, as would hazardous materials and fire safety protocols. Security measures would also be similar, consisting of electronic surveillance and off-site monitoring.

As there would be no permanent operations staff or other routine activities that would use water, water consumption during operation of the collection substations would be, at most, negligible.

At the end of the useful life of the nearby solar and energy storage facilities, when all of the facilities served by a collection substation have been decommissioned and the incoming gen-tie lines have been de-energized, the collection substations would not be decommissioned since they would continue to have usefulness in providing system redundancy and resilience for the state and federal power grid.

2.5.2.3. VCIP CONNECTOR TRANSMISSION LINES

2.5.2.3.1. DESCRIPTION OF THE VCIP CONNECTOR TRANSMISSION LINES

As described in Section 2.3.2., the five collection substations within the VCIP would be connected by a backbone transmission corridor running through the center of the VCIP in a northwest-southeast direction (see Figure 2.3-1). This corridor would be approximately 59 miles long and would include two parallel 500-kV transmission lines which would collect VCIP-generated power for conveyance to the state and federal power systems. The planned transmission alignment is described as follows. Commencing in the north from the planned Substation No. 1 (Newpoint) at N. Fairfax and W. Ashlan Avenues, the transmission corridor would extend east and southeast to a point 0.7 miles west of the City of Mendota boundary where it would turn south and continue to Substation No. 2 just west of SR-33 and north of W. American Avenue. From there the

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transmission corridor would generally follow the eastern Plan Area boundary, connecting to Substation No. 3 near the intersection of W. Floral Avenue and S. San Mateo Avenue, and then continuing southeastward to the Substation No. 4 near Five Points, and then southward along SR-145 to Substation No. 5 at SR-198.

The 59-mile long VCIP connecting transmission corridor is planned to include two parallel 500-kV transmission lines within 1,000-foot wide corridors. Each 500-kV transmission line requires a 200-foot right-of-way, and parallel rights-of-way are required to be 50 feet apart. Thus the two parallel lines would require a combined right-of-way of approximately 450 feet (200 + 50 + 200), with the additional corridor width included for planning purposes to allow for additional equipment maneuvering space during construction as well as design flexibility at the engineering stage.

In addition to the connecting transmission corridor, a central transmission corridor is planned to run east-west through the Plan Area to provide connection between the VCIP backbone corridor at Substation No. 3 and the new Manning Substation planned in the vicinity of W. Manning Avenue and Interstate 5. This single 500-kV transmission line would be approximately 20 miles long and would provide an alternative path for energy exported from the VCIP to connect to the larger grid and thus provide redundancy and resilience to the system. It is noted that the Manning Substation is currently in the CPUC approval process and is planned to be in service in June 2028. Thus, while the Manning Substation itself is not part of the VCIP, the 20-mile connecting transmission line connecting the VCIP to the Manning Substation is part of VCIP.

The tower structures of the transmission lines would consist of self-supporting tubular steel poles (TSPs or monopoles) (see Figure 2.5-7). These monopoles would be larger than those described for the gen-tie lines in Section 2.5.2.1.1. Although four-legged lattice steel towers have been traditionally utilized for transmission lines, monopoles are currently favored due to their reduced cost, which is now comparable to lattice towers, their unobtrusive visual profile, and because they are highly suitable for flat terrain with deep soils, as occurs throughout the Plan Area. However, lattice steel towers would be utilized for portions of the outside transmission corridors, described subsequently, specifically in mountainous terrain where soils are too shallow to support deep foundation piers. The tower-to-tower spans would average over 1,000 feet (about 5 towers per mile), and the monopoles would range in height from 140 to 190 feet depending on location and span distances between monopoles. It is estimated that the VCIP connector transmission lines would include up to 759 monopoles (59 miles X 2 lines; +20 miles X 1 line =138 line miles; X 5 poles/line mile = 690 poles; + 69 extra poles for turning and crossing points = 759 total monopoles. All of these heavier monopoles would be bolted onto steel-reinforced concrete piers which would be cast in place in excavated holes in the ground. The concrete footings would be up to 55 feet deep and up to 10 feet in diameter.

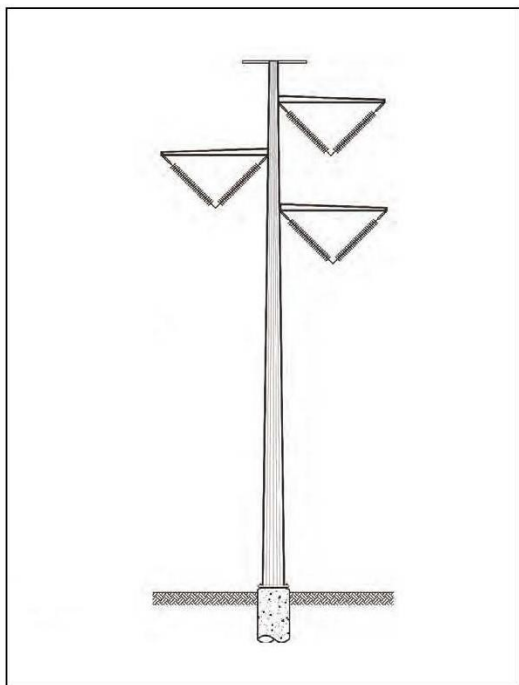
2.5.2.3.2. CONSTRUCTION OF THE VCIP CONNECTOR TRANSMISSION LINES

It is anticipated that the VCIP connector transmission lines will be constructed in 15-mile segments, which is the average distance between the five VCIP collection substations on the backbone transmission line. Construction of the transmission lines would be similar to the construction of the gen-tie lines described in Section 2.5.2.1.2.

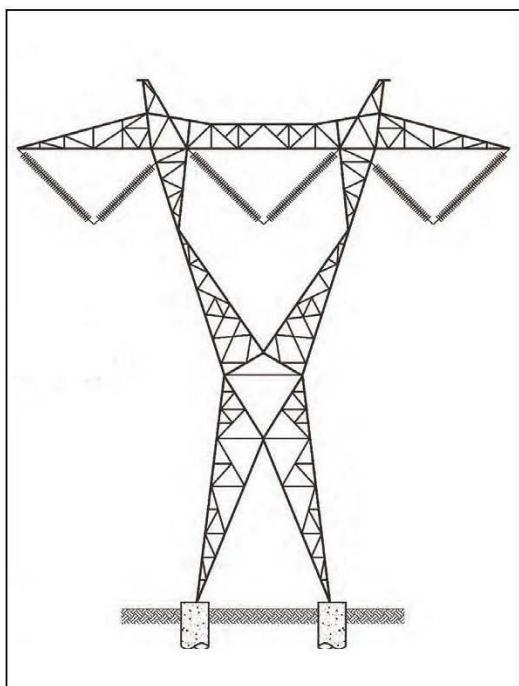
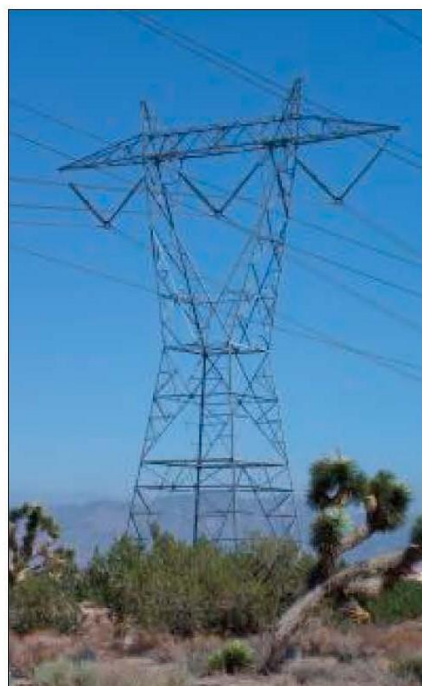
The construction practices and inputs described above for the gen-tie line are closely applicable to the construction of the transmission line segments. In the following discussion, the construction of the transmission lines will be described in terms of similarities and differences from the previously described construction of the gen-tie lines.

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VCIP



500-kV Single Circuit Monopole - Up to 190 feet



500-kV Single Circuit Lattice Steel - Up to 170 feet

Typical 500-kV Transmission Towers
Figure 2.5-7

In the description of gen-tie pre-construction activity in Section 2.5.2.1.2, the descriptions of right-of-way acquisition, surveying, and pre-construction activities, clearing the right-of-way, construction access, and staging areas, are all equally applicable to transmission line construction and are not repeated here. The only notable difference is that the ROW for a 500-kV transmission line would be 200 feet plus a 50-foot buffer from the adjacent ROW, as noted above. As mentioned in Section 2.3.2, transmission corridors for the VCIP are planned to be 1,000 feet wide, in order to provide additional width for equipment maneuvering during construction, and design flexibility at the engineering stage, and other factors.

Based on the total of 79 miles of approximate combined length for these transmission corridors, the approximate acreages of land disturbance associated with transmission construction were estimated, as shown in Table 2.5-2 on the next page. It is assumed that all tower construction sites and pulling sites would be accessible from adjacent county roads or farm roads, and that no new access roads would be required.

The VCIP connector transmission lines would be constructed in the same manner as described for gen-tie construction in Section 2.5.2.1.2., and site management would also involve control of stormwater, dust, solid waste, and hazardous materials as described. The construction of a typical 15-mile connector transmission line segment (consisting of up to 83 monopoles) would take about 6 months (100 workdays) and would involve 50 workers on average and 60 workers during peak construction periods. These workers would be drawn from the surrounding communities and would have an average roundtrip commute of about 95 miles. Construction would involve approximately 1,885 truck deliveries, including 60 for construction equipment, 580 for monopoles and electrical components, and 1,245 for concrete (83 poles at 150 cy concrete per pole / 10 cy per truck). On average, the typical 15-mile transmission segment would receive about 12.5 truck deliveries per day over the 100-day construction period.

Upon completion of each segment of transmission line, the areas disturbed during construction would be restored as appropriate to allow for resumption of cultivation of row and tree crops, if applicable.

TABLE 2.5-2
VCIP CONNECTOR TRANSMISSION LINES – LAND DISTURBANCE ESTIMATES¹

Transmission Line Feature	Quantity	Land Disturbance (Acres)		
		Total Disturbance Area	Temporarily Disturbed/ To be Restored	Permanently Disturbed
Tower Sites	759 ²	759 ³	684	76 ⁴
Pulling/Tensioning Sites	69 ⁵	276 ⁶	276	0
Staging/Material Storage Sites	8 ⁷	40	40	0
Totals	--	1,076 ac.	1,000 ac.	76 ac.

Footnotes:

¹ Total length of transmission line (59 miles X 2 lines) + (20 miles X 1 line) = 138 line miles.

² Approx. 5 monopoles per line mile = 690 monopoles + 69 extra poles at turning and crossing points = 759 total monopoles.

³ Temporary disturbance area at each monopole site = up to 1.0 acre, i.e., temporary clear areas = up to 210 X 210 feet.

⁴ Permanent disturbance area at each monopole site = 0.1 acre, i.e., permanent clear areas = 65 X 65 feet.

⁵ Pulling/Tensioning sites are two miles apart. (138 line miles / 1 site per 2 miles = 69 sites)

⁶ Pulling/Tensioning sites estimated to disturb an average of 4 acres at each site.

⁷ One staging site per 10 miles of corridor over 79 corridor miles. Each staging site is 5 acres.

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2.5.2.3.3. OPERATION AND MAINTENANCE OF TRANSMISSION LINES

After completion, the transmission lines would be inspected, maintained, and repaired in accordance with the applicable regulatory requirements. Transmission components would be inspected at least once per year for corrosion, equipment misalignment, loose fittings, and mechanical problems. 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.

2.5.2.3.4. POST-VCIP REUSE OF VCIP TRANSMISSION LINES

After decommissioning of the solar and energy storage facilities in the VCIP, it is not anticipated that the backbone transmission line would be decommissioned. Instead, the governing agency would likely make a determination that the backbone transmission line would still be needed to provide redundancy and resilience to the overall electrical grid, even without functioning as a collection line for VCIP renewable generation. The retention of the transmission corridor would be important for managing congestion on the bulk transmission system and providing alternative transmission routing in the event of system outages. .

2.6. TRANSMISSION CORRIDORS OUTSIDE THE VCIP

The transmission corridors for delivery of solar generation from potential VCIP projects to urban electricity markets in northern and southern California have been identified at a conceptual level in this PEIR to allow a general discussion of environmental impacts associated with transmission line development for informational purposes. These transmission delivery corridors extend far beyond the District's boundaries and are not part of the proposed VCIP. Planning and approval of these outside transmission lines are under the jurisdiction of the state and federal energy regulatory agencies, and public utilities. No specific bulk transmission projects are currently planned by others to convey VCIP solar generation to the load centers, and no attempt has been made to define specific new bulk transmission lines as part of the VCIP planning process.

However, for informational purposes, the PEIR includes a conceptual description of potential transmission routes outside the Plan Area. Based on preliminary power flow studies, assumptions were made regarding the routing and capacities of these outside transmission delivery lines. Since no specific transmission routes or substation upgrades outside the Plan Area have been defined, the specific locations of outside transmission lines are not known at this time. However, it is reasonable to assume that the required new transmission lines would run adjacent to existing transmission corridors to major regional substations at the load centers. Since these transmission improvements would be integral to planning and programming of grid-level transmission state-wide, which is the responsibility of multiple state agencies and utilities, it is beyond the authority of the District or any local government to undertake specific route planning or design for such transmission facilities. Thus, the conceptual transmission routes identified in this PEIR have not been evaluated for the specific locations, constructability, desirability, cost, or likelihood of their successful permitting. They also have not been studied by transmission planning groups to identify reliability concerns or effects on other transmission systems.

For informational purposes, the conceptual bulk transmission routes are described and evaluated in this PEIR to a level of detail commensurate with the conceptual level at which they have been identified in this Project Description. Based on the assumed corridors, it is possible to estimate the approximate linear miles and approximate acreages and general nature of land disturbance associated with the outside transmission

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corridors. This high level of description of conceptual transmission corridors will allow a very general overview of potential environmental impacts associated with the outside transmission lines that could be expected.

The bulk transmission lines which are assumed to deliver renewable energy from the VCIP to outside regional substations at the load centers are shown in Figure 2.4-1 and listed below, along with the linear miles of transmission between the applicable VCIP collection substations and the destination substations.

Northern California

- One 500-kV line from the planned VCIP Substation 1 (Newpoint) to the existing Tracy Substation (~102 line miles).
- Two 500-kV lines from Newpoint Substation to connect with existing Los Banos-Gates Line No. 3 (~13.5 miles; ~27 line miles)
- One 500-kV line from the planned VCIP Substation 1 (Newpoint) to the existing Tesla Substation (~95 line miles).
- One 500-kV line from the planned VCIP Substation 1 (Newpoint) to the existing Moss Landing Substation (~76 line miles).

Southern California

- One 500-kV line from the VCIP Substation 5 to the existing Midway Substation (~72 miles).
- One 500-kV line from the VCIP Substation 5 to the existing Vincent Substation (~177 line miles).

In corridors with one transmission line, the required right-of-way would be 200 feet wide. The corridors with two parallel 500-kV lines would require a combined right-of-way of 450 feet (200 + 50 + 200). In both cases, a wider corridor of 1,000 feet is assumed for planning purposes.

The general characteristics of the outside transmission corridors would be similar to those described for the VCIP connector transmission corridors in Section 2.4.2.3.1. Assuming for purposes of description that the outside transmission lines would be constructed in 15-mile segments (consisting of 83 towers per segment), each segment would take about 6 months (100 workdays) and would involve 50 workers on average and 60 workers during peak construction periods. These workers would be drawn from the surrounding communities and would have an average roundtrip commute of about 95 miles. Construction would involve approximately 1,885 truck deliveries, including 60 for construction equipment, 580 for towers and electrical components, and 1,245 for concrete. On average, the typical 15-mile transmission segment would receive about 18.9 truck deliveries per day over the 100-day construction period.

Based on the total of 348 miles of approximate combined length for these assumed corridors, the approximate acreages of land disturbance associated with the transmission corridors were estimated, as shown in Table 2.6-1.

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TABLE 2.6-1
TRANSMISSION DELIVERY LINES OUTSIDE VCIP PLAN AREA – LAND DISTURBANCE ESTIMATES¹

Transmission Line Feature	Quantity	Land Disturbance (Acres)		
		Total Disturbance Area	Temporarily Disturbed/ To be Restored	Permanently Disturbed
Tower Sites	3,020 ²	3,020 ³	2,718	302 ⁴
Pulling/Tensioning Sites	275 ⁵	1,100 ⁶	1,100	0
Staging/Material Storage Sites	35 ⁷	175	175	0
Totals	--	4,295 ac.	3,993 ac.	302 ac.

Footnotes:

¹ Total length of outside transmission line is approximately 549 line miles.

² Towers at 5 towers per line mile. (549 line miles X 5 towers per mile = 2,745 towers; + 10% extra towers for turns and crossings = 275 towers; Total = 3,020 tower sites.)

³ Temporary disturbance area at each tower site = up to 1.0 acre, i.e., temporary clear areas = up to 210 X 210 feet.

⁴ Permanent disturbance area at each tower site = 0.1 acre, i.e., permanent clear areas = 65 X 65 feet.

⁵ Pulling/Tensioning sites are two miles apart. (549 line miles / one site per two line miles = 275 sites)

⁶ Pulling/Tensioning sites estimated to disturb an average of 4 acres at each site.

⁷ One staging site per 10 miles of corridor over 348 corridor miles. Each staging site is 5 acres. (Note: In several instances the two transmission lines will share a corridor resulting in fewer corridor miles than transmission line miles indicated above.)

The land disturbance estimates in Table 2.6-1 apply to monopoles and steel lattice transmission towers, both of which are expected to be used for the outside transmission lines. On the level ground characteristic of the floors of the San Joaquin and Antelope Valleys, monopoles would be used since the deep soils could accommodate the deep foundation piers required. In the hilly and mountainous terrain of the Tehachapi Range, San Gabriel Mountains, and Coast Ranges, soil cover would be thin and unsuitable for monopoles. Approximately one-half of all the tower sites would be located in the rolling and steep terrain in these ranges. In these areas, lattice steel towers would be used since they can be supported by shallower footings for each of their four legs. The land disturbance estimates in Table 2.6-1 assume that the temporary and permanent disturbance areas associated with steel lattice towers would be similar to those for monopoles. In steep terrain, shorter span lengths may be required which would increase the total number of towers and associated disturbance areas. However, a review of the existing transmission lines through these hilly areas indicated that most spans are at least 1,000 feet, with a few as short as 800 feet.

The construction of the transmission lines through hilly terrain would utilize existing tower access roads serving the existing adjacent transmission lines, so ground disturbance associated with construction of new access roads would be minimal. Also, in most segments where the transmission corridors would pass through hilly terrain, the vegetation is composed of grassland with dispersed trees, indicating that few if any clearance areas between towers would be needed to provide minimum vertical distance between conductor sags and ground vegetation. However, some tree cutting and trimming would be required at some tower sites.

In summary, the construction practices for the outside transmission lines would be similar to those described for the VCIP connector transmission corridors in Section 2.5.2.3.2. The main difference would be the need to construct new towers and to string conductors through areas of rolling terrain, which would also involve the use of steel lattice towers instead of monopoles. This would extend the overall duration of construction

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(perhaps doubling the construction time through the hilly terrain) and may require the addition of specialized personnel. However, the estimates of overall ground disturbance shown in Table 2.6-1 would apply, as would the above estimates of construction deliveries and total number of construction workers.

Operation and maintenance activities associated with the outside transmission lines would be similar to those described for the VCIP connector transmission corridors in Section 2.5.2.3.3. The main differences would be greater need for tree trimming in forested areas, as well as generally heightened fire prevention practices and awareness.

With respect to decommissioning, it is expected that the outside transmission lines would not be decommissioned but would instead continue to provide bulk transmission capacity as well as redundancy and resilience for the state's electrical grid.

References

- | | |
|------------------|--|
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| CEC 2024f | California Energy Commission (CEC). 2024. <i>QFER Power Plant Annual Generation</i> . https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/quarterly-fuel-and-energy-report-qfer-1 |
| UL 2025 | UL Solutions. <i>UL 9540A Test Method</i> . 2025. https://www.ul.com/services/ul-9540a-test-method |
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3. ENVIRONMENTAL SETTING

3.1. DESCRIPTION of the PLAN AREA

VCIP Plan Area

The Plan Area encompasses the entire Fresno County portion of the District's service area, which consists of approximately 534,800 acres in western Fresno County. It comprises approximately 85 percent of District's approximately 614,700-acre service area. The Plan Area does not include any lands within the Kings County portion of the District's service area (see Figures 3.1-1 through 3.1-8).

The Plan Area consists entirely of lands on the floor of the western San Joaquin Valley. It is generally bounded on the west by the foothills of the Coastal Ranges, on the north by West Nees Avenue, on the east by Fresno Slough, and the south by the Fresno/Kings County boundary. The terrain is generally level, with a slight downgradient to the northeast. The Plan Area contains no rivers, and a few creeks emerge from the western foothills and terminate on the west side of the valley in self-contained watersheds with no outlets. The three main drainage courses in the Plan Area include Panoche Creek, Cantua Creek, and Arroyo Pasajero Creek (also known as the Los Gatos Creek). For a detailed description, see Section 4.10. *Hydrology and Water Quality*.

The Plan Area is served by a network of state highways including Interstate-5 (I-5), State Route (SR)-33, SR-145, SR-180, SR-198, and SR-269, as well as major county roads like W. Nees, N. Russell, W. Fairview, W. Shaw, W. Shields, Belmont, W. Panoche, W. Manning, W. Kamm, W. Mountain View, and W. Mount Whitney, among others. These highways and roads are in good condition and provide effective transportation access throughout the Plan Area. For a detailed description, see Section 4.15. *Transportation*.

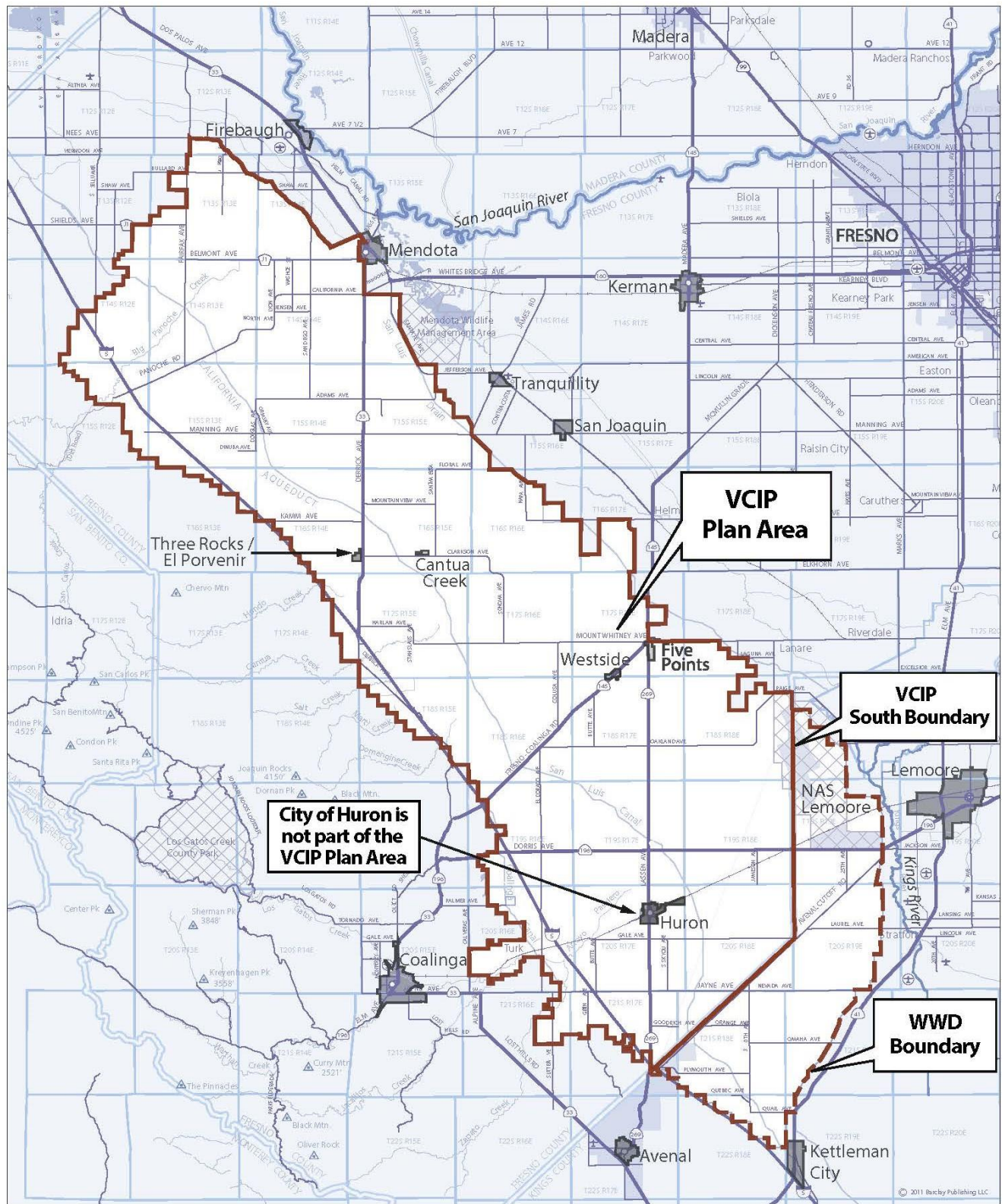
Most of the Plan Area is devoted to agricultural cultivation and supporting uses. The main crops are tree crops such as almonds and pistachios, and row crops such as tomatoes, grapes, cotton, and wheat. On average, approximately 189,640 acres are fallowed each year, mainly due to water supply constraints. Water supply for crop irrigation is primarily provided by deliveries of Central Valley Project (CVP) contract water. CVP contract water supply is conveyed to the District through the California Aqueduct/San Luis Canal which runs through the western parts of the Plan Area. In recent years, actual deliveries of CVP contract water have been dramatically curtailed. The District delivers its allocated CVP contract water throughout the Plan Area by the District's extensive water distribution system from a series of turnouts located at approximately one-mile intervals along the San Luis Canal. Other agricultural supporting infrastructure within the Plan Area includes groundwater wells, storage sheds and shops, electrical power lines, and farm roads. The Plan Area also includes former irrigation trenches and return flow drainage ditches, most of which have been disused due to the advent of drip irrigation as the primary method of crop irrigation in the Plan Area. For a more detailed description of agriculture in the Plan Area, see Section 4.2. *Agriculture and Forestry Resources*.

The Plan Area includes numerous land uses that serve or are associated with agricultural production. These include several large agricultural processing facilities such as tomato processing plants, almond hulling plants, packing plants, cold storage facilities, and fertilizer manufacturing plants, as well as feed lots, and equipment and materials storage yards.

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3. Environmental Setting

3.1. Description of the Plan Area

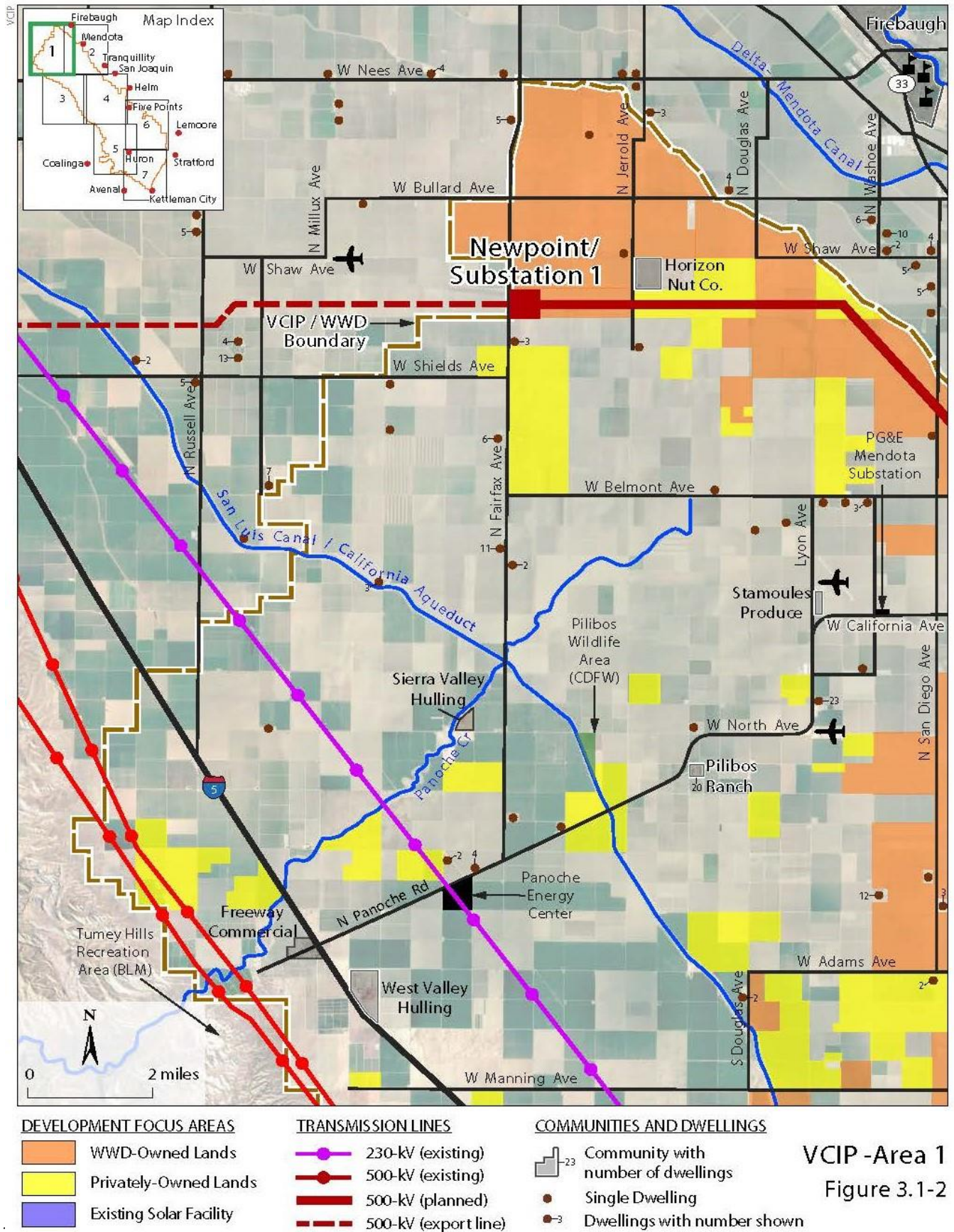


Source: WWD

VCIP Setting
Figure 3.1-1

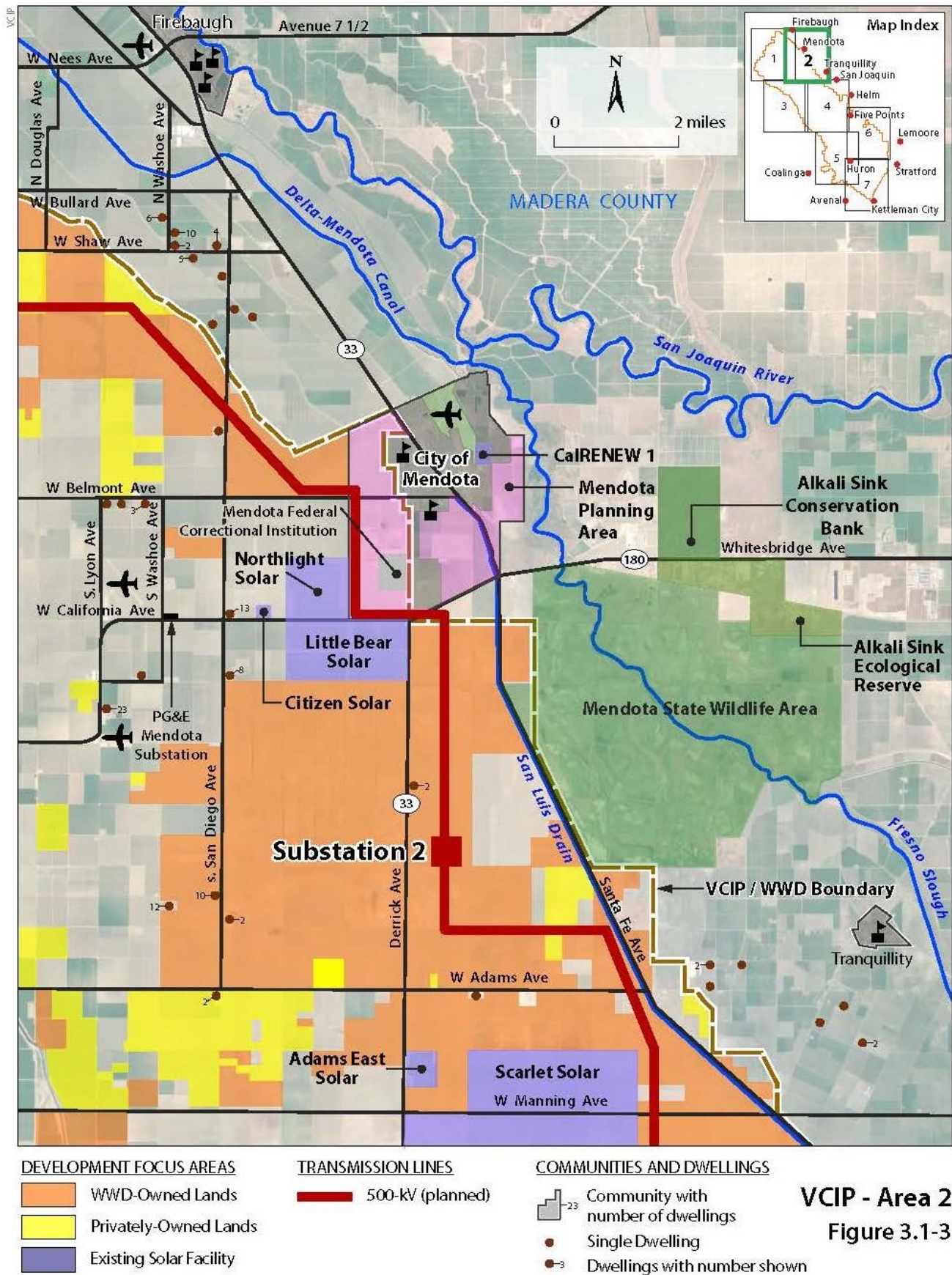
3. Environmental Setting

3.1. Description of the Plan Area

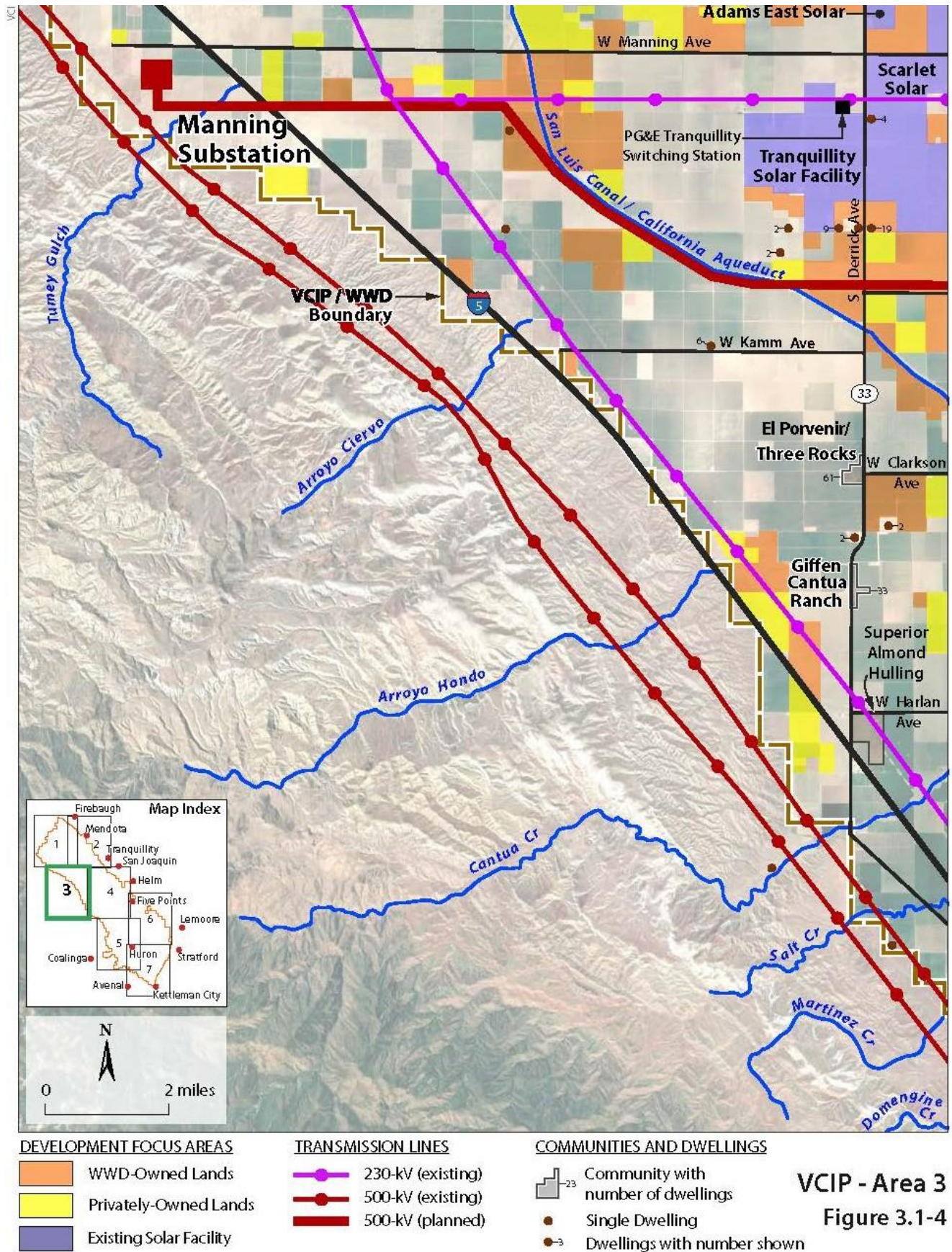


3. Environmental Setting

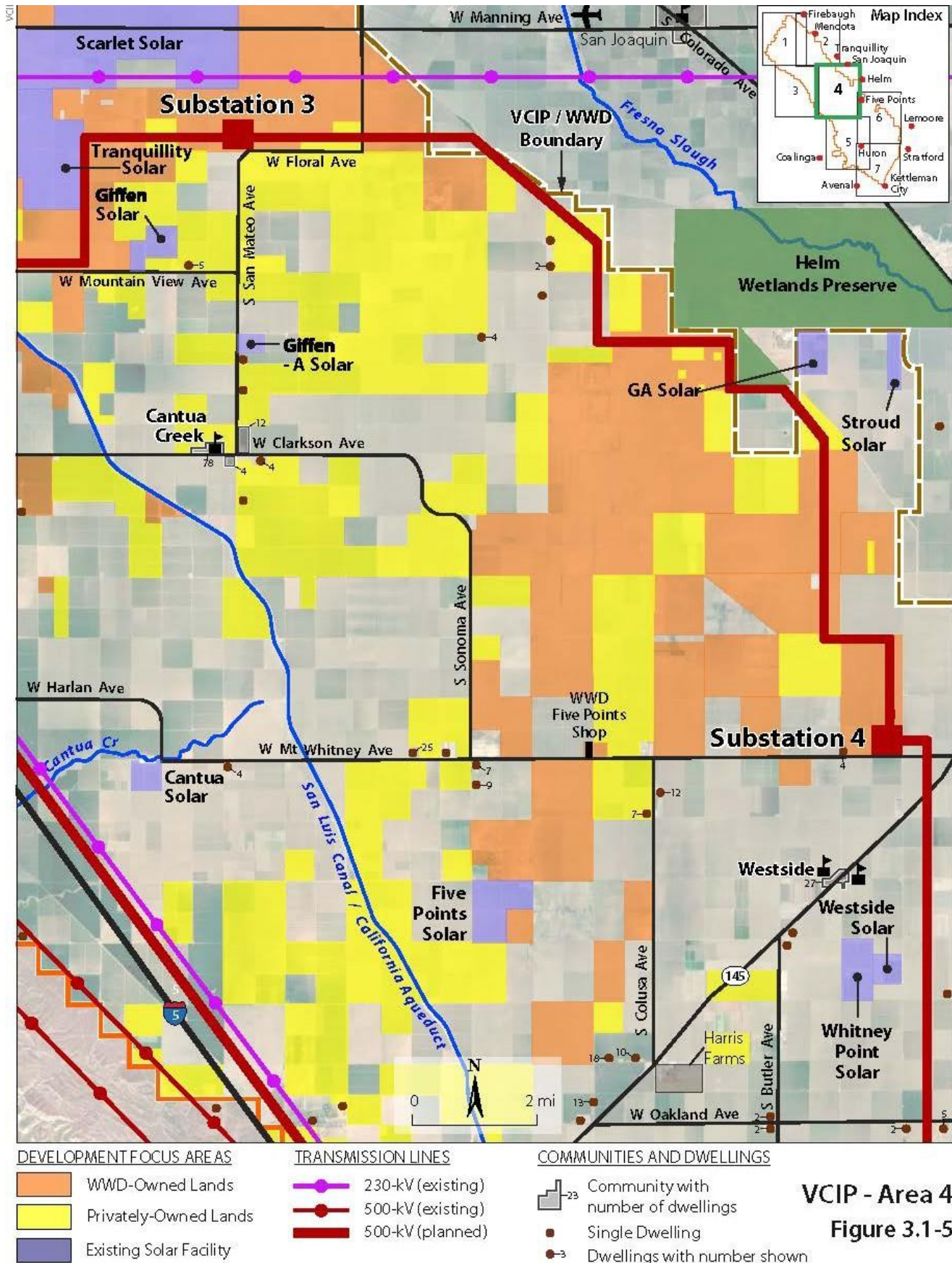
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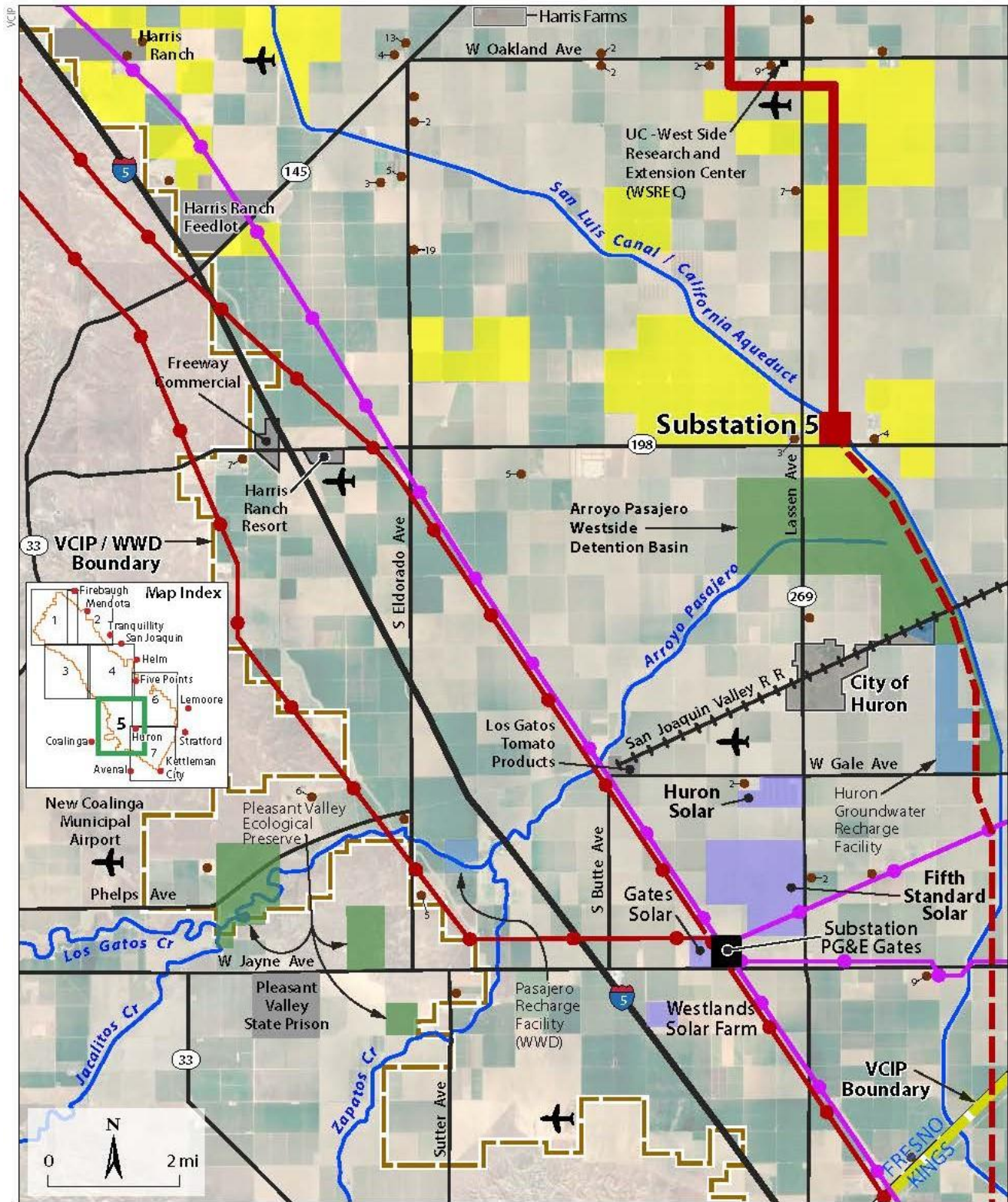
3. Environmental Setting
3.1. Description of the Plan Area



3. Environmental Setting
3.1. Description of the Plan Area



3. Environmental Setting
3.1. Description of the Plan Area



DEVELOPMENT FOCUS AREAS

- WWD-Owned Lands
- Privately-Owned Lands
- Existing Solar Facility

TRANSMISSION LINES

- 230-kV (existing)
- 500-kV (existing)
- 500-kV (planned)
- 500-kV (export line)

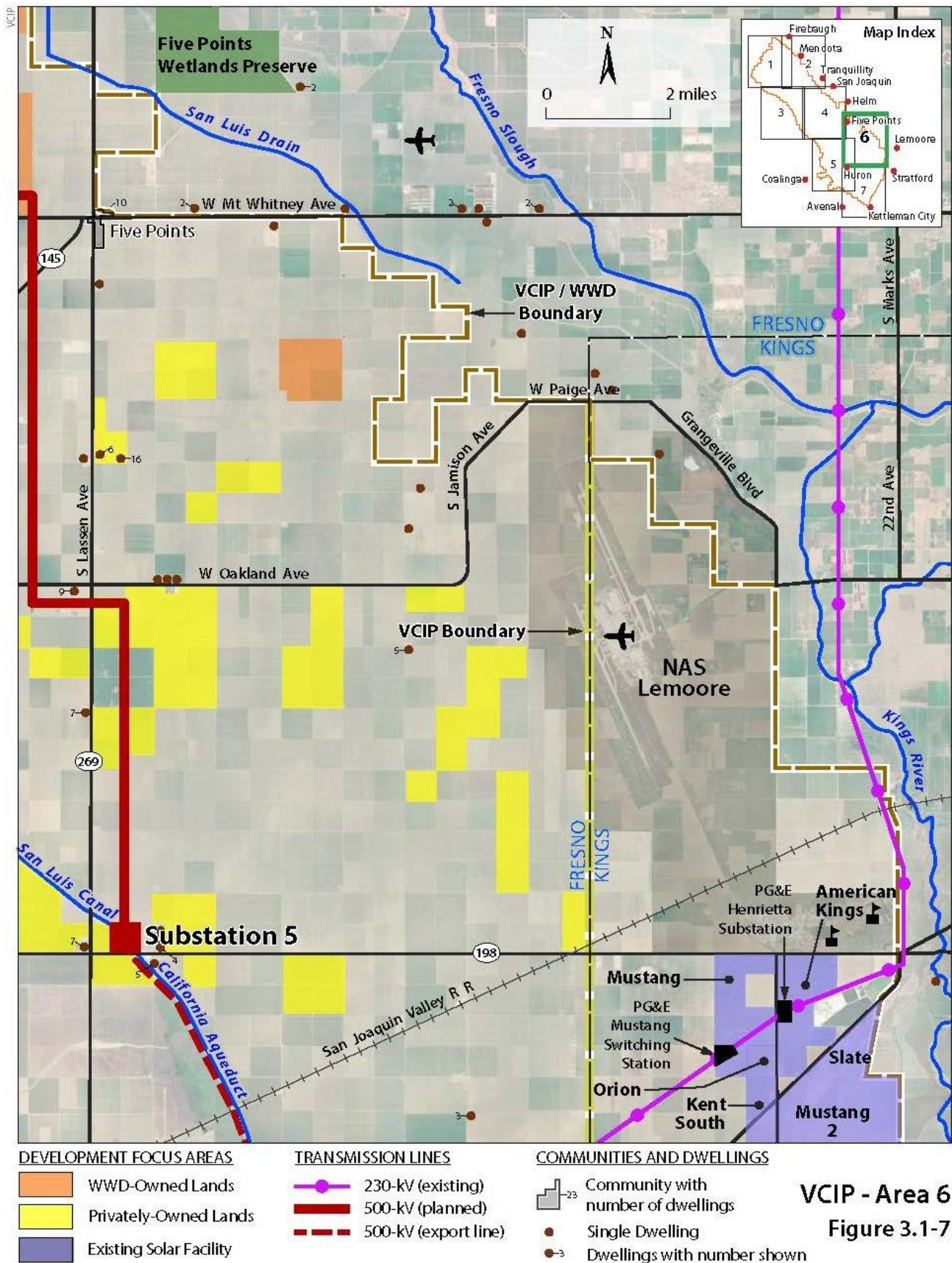
COMMUNITIES AND DWELLINGS

- Community with number of dwellings
- Single Dwelling
- Dwellings with number shown

VCIP - Area 5
Figure 3.1-6

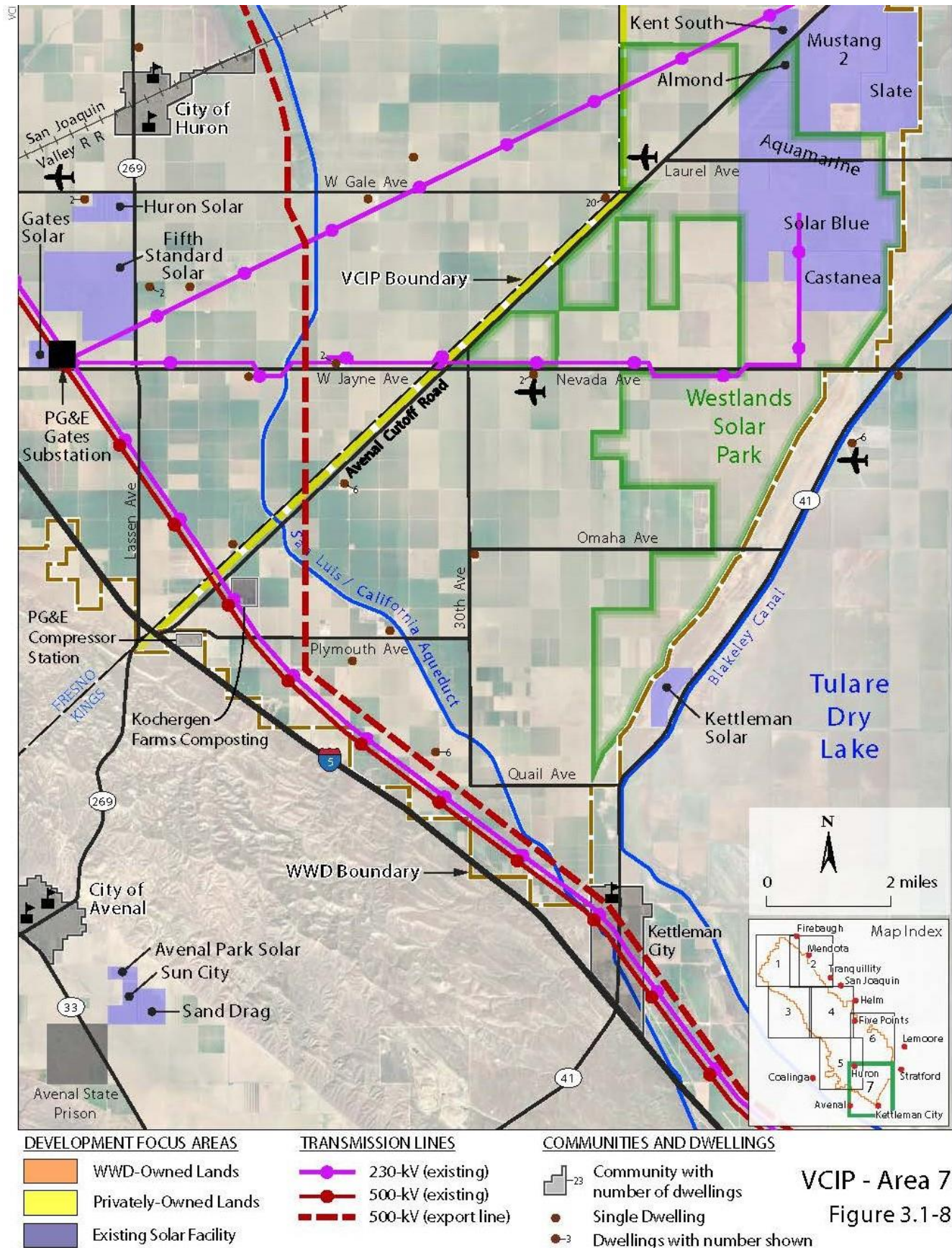
3. Environmental Setting

3.1. Description of the Plan Area



3. Environmental Setting

3.1. Description of the Plan Area



The Plan Area includes several unincorporated communities including Cantua Creek, Three Rocks/El Porvenir, Westside/O'Neill, and Five Points. These communities are primarily residential with limited commercial retail or service uses. The Plan Area includes two elementary schools at Cantua Creek and Westside. Otherwise, the Plan Area is sparsely settled with ranches, individual dwellings and clusters of dwellings (farmworker housing) dispersed throughout the area (see Figures 3.1-9a and 3.1-9b). See Section 4.11. *Land Use and Planning* for a detailed description.

There are several incorporated cities in the Plan Area vicinity. These include the cities of Coalinga, Mendota, Firebaugh, San Joaquin, Avenal, and Lemoore, and the unincorporated communities of Tranquillity, Helm, Kettleman City, and Stratford. The City of Huron is surrounded by the VCIP Plan Area, but it is not within the Westlands service area and is not included in the VCIP Plan Area.

The Plan Area also includes several clusters of highway commercial development along I-5, including restaurants and gas stations at the Panoche Road, W. Jayne Ave., and SR-269 Interchanges, as well as hotels at the SR-198 interchange.

Federal and state institutions and facilities in the Plan Area include: the Federal Correctional Institution (FCI) Mendota, the University of California West Side Research and Extension Center (WSREC) near Five Points, and a portion of Naval Air Station (NAS) Lemoore.

The District has several facilities in the Plan Area, including its field office and shop at Five Points, and field offices near Huron and Tranquillity. The District also operates over 1,000 miles of water distribution pipeline with numerous pump stations and storage tanks, as well as the Pasajero Groundwater Recharge Facility.

In addition to the California Aqueduct/San Luis Canal and I-5, other major regional infrastructure also passes through the Plan Area. These include several PG&E high voltage transmission lines, including two 230-kV lines and a 500-kV line running parallel to I-5, as well as several other 230-kV lines and medium-voltage lines running through the interior of the Plan Area. PG&E operates two major regional substations in the Plan Area, including the Gates Substation on W. Jayne Avenue and the Panoche Substation on W. Panoche Road, as well as several smaller substations dispersed throughout the Plan Area. PG&E also has a major natural gas pipeline that runs parallel to I-5, and several other transmission pipelines that branch off the primary line to the east and northeast through the Plan Area. There is also a major crude oil pipeline that runs along the base of the foothills on the western margin of the Plan Area. The lone rail line in the Plan Area is the locally-serving San Joaquin Valley Railroad line running southwest from Fresno through the City of Huron and on to the Los Gatos Tomato Products Plant.

The Plan Area is also the site of several oil and gas fields which once included hundreds of oil and gas wells dispersed throughout the area. The oil and gas fields have been officially declared abandoned by the state, and almost all remaining wells have been plugged and abandoned. There is little to no surface evidence of these former wells, which were severed several feet below the ground surface with the upper piping removed. See Section 4.9 *Hazards and Hazardous Materials* for a detailed description of these facilities and infrastructure.

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3. Environmental Setting
3.1. Description of the Plan Area



Photo 1: Typical Agricultural Scene



Photo 2: Cantua Creek



Photo 3: Three Rocks / El Porvenir

VCIP Plan Area - Representative Photos
Figure 3.1-9a

3. Environmental Setting
3.1. Description of the Plan Area



Photo 4: Almond Hulling Plant



Photo 5: Freeway Commercial at I-5 / SR-198

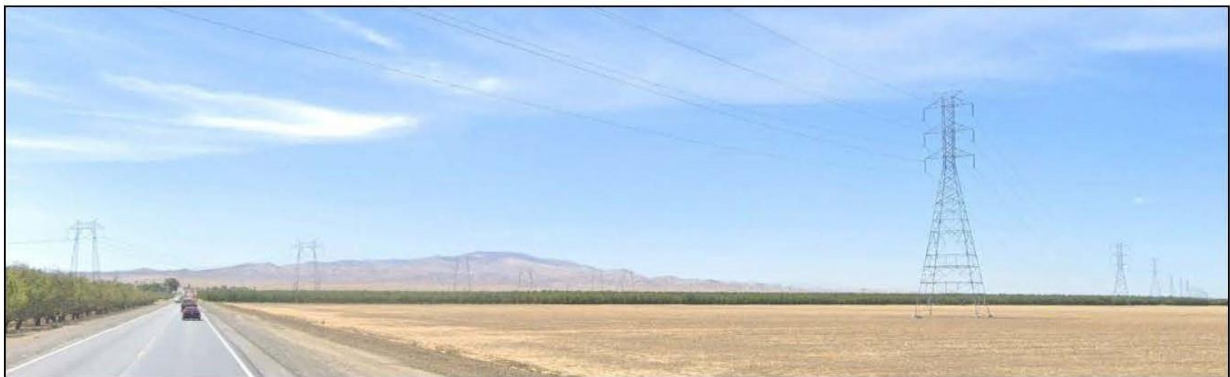


Photo 6: Rural Scene with Transmission Tower Lines

VCIP Plan Area - Representative Photos
Figure 3.1-9b

The Plan Area also includes several large and medium-sized solar generating facilities, all of which were constructed over the past 10 years, most on lands previously acquired by the District for repurposing. Twenty operating solar facilities currently occupy approximately 14,000 acres within the Plan Area, and an additional 11 pending and approved solar and energy storage projects will occupy about 17,200 acres in the Plan Area upon completion. These projects include supporting infrastructure such as on-site substations and gen-tie lines for interconnection to the nearest regional collection substations.

The landscape of the Plan Area has been highly altered by the introduction of agricultural cultivation over the past 100 years. There are few areas of natural and naturalizing vegetative cover. These areas include: the Pleasant Valley Ecological Preserve, which is partially located within the Plan Area near Coalinga; the Arroyo Pasajero Westside Detention Basin located north of Huron; and the Pilibos Wildlife Area located adjacent to the San Luis Canal north of N. Panoche Road. Some remaining natural vegetation occurs along the larger drainage courses such as Panoche and Cantua Creeks, and Arroyo Pasajero. Elsewhere, the vegetation associated with the farmlands of the Plan Area is largely confined to landscape trees and shrub species planted around ranch complexes and individual dwellings.

Surrounding Land Uses

Outside the Plan Area boundaries, the adjacent and nearby lands to the north, east, and south are similar in character to the lands within the Plan Area, and consist predominantly of agricultural land in row crops, tree crops, and fallow fields, along with widely dispersed rural dwellings and agriculture-related commercial uses. The lands to the west and southwest consist mainly of annual grasslands covering the foothills of the Diablo Range. The hills near Coalinga and Kettleman City include several major oil and gas fields, which are in decline, but some wells still operate.

Several Fresno County communities are adjacent and near the Plan Area, including the Cities of Coalinga, Mendota, Firebaugh, San Joaquin, and the unincorporated communities of Tranquillity and Helm.

Nearby communities in Kings County to the south include the Cities of Lemoore and Avenal, and the unincorporated communities of Kettleman City and Stratford. The adjacent areas of Kings County also include the major portion of NAS Lemoore, as well as the partially completed Westlands Solar Park and other solar facilities that occupy approximately 12,500 acres, with another 6,000 acres approved for construction.

There are also several wildlife areas near and adjacent to the Plan Area. These include the Mendota State Wildlife Area, the Alkali Sink Ecological Reserve, and the Alkali Sink Mitigation Bank, all of which are located east of Mendota and just outside the Plan Area. Other nearby wildlife areas include the Helm Wetlands Preserve located adjacent to the Plan Area near the community of Helm, the Five Points Wetlands Preserve located northeast of Five Points, and the Pleasant Valley Ecological Preserve located partially within the Plan Area near Coalinga.

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4. ENVIRONMENTAL IMPACT ANALYSIS

4.0. APPROACH TO ENVIRONMENTAL ANALYSIS

This Draft PEIR evaluates and discloses the environmental impacts associated with the Valley Clean Infrastructure Plan (VCIP), in accordance with CEQA. The potentially significant environmental impacts of all phases of VCIP implementation, including construction, operation, and decommissioning, are evaluated in Sections 4.1 through 4.18, consistent with CEQA Guidelines Section 15126.2. A significant impact is defined in CEQA as a substantial or potentially substantial adverse change to the physical environment resulting from implementation of a project. Where significant environmental impacts are identified, potentially feasible mitigation measures are described that may avoid or substantially lessen such impacts. Mitigation measures may avoid, minimize, or compensate for significant adverse impacts and need to be fully enforceable through permit conditions, agreements, or other legally binding means (CEQA Guidelines, section 15126.4[a]). Mitigation measures are not required for impacts that are found to be less than significant. In addition, Chapter 6, “Alternatives to the Proposed Project,” presents a reasonable range of alternatives that may avoid or reduce the Project’s potentially significant impacts on the environment.

4.0.1. Program Level Environmental Review

This PEIR 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.

A Program EIR allows for a more comprehensive and coordinated consideration of effects and alternatives than would be practical for an EIR on separate individual actions, and ensures consideration of cumulative impacts that might be missed on a case-by-case basis. A Program EIR is not intended to examine the specific environmental effects associated with individual actions that may be undertaken under the larger program but are presently unforeseeable and would be determined at the project level. Subsequent environmental review may be required for later activities within the program pursuant to CEQA Guidelines section 15168(c) if they may result in effects not evaluated in the Program EIR.

4.0.2. Environmental Setting/CEQA Baseline

CEQA Guidelines Section 15125(a) states that an EIR must include a description of the physical environmental conditions in the vicinity of the project, as they exist at the time the Notice of Preparation is published (i.e., February 2024 for the VCIP), or if no notice of preparation is published, at the time environmental analysis is commenced, from both a local and regional perspective. This environmental setting will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant.

CEQA Guidelines section 15125(a)(2) also provides that a lead agency may use projected future conditions as the sole baseline for analysis in some instances. This would apply in the case of a phased program where individual projects under the program will not be constructed or become operational until several years hence. The VCIP is planned to be implemented over an approximately 10-year period, with construction of the first individual projects anticipated to commence around 2028, and with additional projects to be constructed in subsequent years. Thus {00081326.1}

for some environmental topics, the baseline for those projects would appropriately be set at the years of scheduled project construction in order to capture the effects of cumulative growth that has occurred in the project setting between the issuance of the NOP in 2024 and the applicable construction year (e.g., 2028-2038). The use of future baselines in these circumstances has been upheld by the California Supreme Court which stated that in these types of situations an analysis based on existing conditions would tend to be “misleading or without informational value” (*Neighbors for Smart Rail v. Exposition Line Construction Authority* (2013), 57 Cal.4th 439). The use of future baselines is standard practice for traffic studies and also applies to related studies such as air quality studies and noise assessments. Existing conditions would serve as the programmatic baseline for other environmental studies such as biological and cultural resources, geology and soils, hydrology, and other natural resources given the unforeseeable changes to site conditions for these resources that may occur up to the time of VCIP project construction. For the analysis of water supply, and related issues such as fallowing, the baseline is best represented by the average of recent historical data over the previous 10 years. This is necessary and appropriate given the wide variability of water supplies from year to year, which is not accurately captured by a single year of data. The use of recent historical averages for water supply conditions therefore provides a more meaningful and informative baseline for decision-makers and the public (CEQA Guidelines, section 15125(a)(1)). When individual VCIP projects are proposed for construction, the subsequent environmental reviews associated with their entitlements would provide detailed assessments of contemporaneous existing conditions and would capture any changes in site conditions that have occurred since the programmatic analysis was conducted, and would therefore serve as accurate project-specific baselines for those impact analyses.

4.0.3. Significance Criteria

CEQA Guidelines section 15382 defines a significant effect on the environment as:

“...a substantial, or potentially substantial adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant.”

Sections 4.1 through 4.18 of this Draft PEIR identify the standards used to determine the level of significance of the environmental impacts for each resource topic, in accordance with the CEQA Guidelines sections 15126, 15126.2, and 15143. The topics upon which these thresholds of significance were developed are based on the environmental checklist in Appendix G of the CEQA Guidelines and regulatory standards of federal, state, and local agencies. The significance of each impact is determined by comparing the effects of the Project to the baseline condition and determining whether substantial, adverse physical changes would result. Methods and assumptions used to frame and conduct the impact analyses are also described in Sections 4.1 through 4.18 for each resource topic.

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4.0.4. Contents of the Resource Sections

Sections 4.1 through 4.18 of this Draft PEIR disclose the environmental impacts of the proposed VCIP, including the Plan's contribution to cumulative impacts associated with each of the environmental topics, and are organized in the following subsections:

ENVIRONMENTAL SETTING

This section describes the environmental conditions in the Plan Area and surrounding region, as appropriate, when the Notice of Preparation of the PEIR was published (February 2024). The geographic extent of the environmental setting area differs depending on the resource being discussed.

REGULATORY CONTEXT

This section presents the applicable federal, state, and local regulatory requirements and planning context for the specific resource topic.

IMPACTS AND MITIGATION MEASURES

Methods and Approach

This section describes the methods, process, procedures, and assumptions used to conduct the impact analysis.

Standards of Significance

This section provides the criteria used to define the level at which an impact would be considered significant, based on the environmental checklist in Appendix G of the CEQA Guidelines and regulatory standards of federal, state, and local agencies.

Direct and Indirect Effects

The potential direct and indirect effects of VCIP implementation are determined by comparing the construction, operation, and decommissioning of the various Plan components (e.g., solar facilities, substations, transmission) to the baseline conditions, as described in the environmental setting. Project impacts are numbered sequentially in each chapter (Impact AG-1, Impact AG-2, Impact AG-3, etc.). A summary impact statement precedes a more detailed discussion of the environmental impact. The discussion includes the analysis, rationale, and substantial evidence upon which conclusions are based. The determination of level of significance of the impact is defined in *italicized* text. A "less-than-significant" determination indicates that implementing the project would not result in a potentially substantial adverse change in the physical environment. A "potentially significant" determination indicates that it would result in a potential substantial adverse change in the physical environment, and results in the need to identify feasible mitigation.

Where an existing law, regulation, or permit specifies mandatory and prescriptive actions about how to fulfill the regulatory requirement, leaving little discretion in its implementation, and where it would avoid an impact or reduce it to or maintain it at a less-than-significant level, the environmental protection afforded by the regulation is considered before impact significance is determined (e.g., Air District dust control regulations). Where existing laws or regulations specify a mandatory permit process for future projects, performance standards without {00081326.1}

prescriptive actions to accomplish them, or other requirements that allow substantial discretion in how they are accomplished, or have a substantial compensatory component, the level of significance is determined before the influence of the regulatory requirements is applied. For example, if the impact would be potentially significant, then the regulatory requirements would be included as a mitigation measure (e.g., compliance with Fresno County noise standards).

Cumulative Impacts

Cumulative impacts, considered in the context of other existing and proposed projects, are addressed at the end of each resource chapter. The existing cumulative condition is described; the effect of past, present, and probable future projects is considered in conjunction with the project to determine whether a significant cumulative impact would result, and the VCIP's potential contribution to that cumulative condition is assessed. If the VCIP's contribution to a significant cumulative impact is considerable, corresponding mitigation measures to avoid or substantially lessen the VCIP's contribution are described to the extent feasible.

The cumulative analysis methodology, including the geographic scope of cumulative analysis for each resource topic, is described below.

4.0.5. Cumulative Impacts

CEQA Guidelines section 15355 defines a cumulative impact as two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. Section 15130(a) of the CEQA Guidelines requires a discussion of the cumulative impacts of a project when the project's incremental effect is cumulatively considerable. "Cumulatively considerable," as defined in State CEQA Guidelines section 15065(a)(3), 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." Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

4.0.5.1. CUMULATIVE IMPACTS APPROACH

CEQA Guidelines section 15130 identifies two basic methods for establishing the cumulative environment in which a project is considered, including: "(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, section 15130(b)). The cumulative analysis in this PEIR uses a combination of the "list" approach and the "summary of projections" (or "plan") approach to identify the cumulative setting.

As mentioned, 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 resource 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 to conclude that a project impact is cumulatively significant (CEQA Guidelines, section 15130(a)(2)-(3)).

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Past and present projects are typically those which have been approved and constructed and are in operation under existing conditions at the time of NOP issuance. As such, these projects contribute to existing conditions for effects such as traffic and noise, and these effects would be captured in inventories of existing conditions such as traffic counts and ambient noise measurements. Therefore, the assessment of cumulative impacts for each resource category must avoid the potential of adding incremental effects of past and present projects to the existing condition where doing so would result in double accounting of such incremental effects.

Probable future projects are those in the vicinity of the Plan Area that have the possibility of interacting with the VCIP implementation to generate a cumulative impact. Probable future projects include those which:

- are partially occupied or under construction;
- have received final discretionary approvals;
- have applications accepted as complete by local agencies and are undergoing environmental review; or
- are public projects which are authorized, fully funded, and scheduled for construction but not yet completed.

As described below, the cumulative list for this PEIR considers other major pending and approved projects, primarily solar projects within and in the vicinity of the Plan Area.

In addition to the “list” approach described above, the cumulative analysis also employs the summary of projections or “plan” approach. This involves consideration of growth rates and patterns as set forth in the Fresno County General Plan and other relevant planning documents.

4.0.5.2. CUMULATIVE SETTING

The geographic area that could be affected by a project varies depending on the environmental resource being considered. When the effects of the project are considered in combination with other cumulative projects, the cumulative effects would also vary depending on the geographic scope of environmental effects being assessed. Table 4.0-1 presents the general geographic areas associated with the different resources addressed in this analysis.

TABLE 4.0-1
GEOGRAPHIC SCOPE OF CUMULATIVE IMPACTS

Resource Topic	Geographic Scope
Aesthetics	Plan Area and surrounding public viewpoints
Agriculture and Forestry Resources	Plan Area and surrounding lands
Air Quality	San Joaquin Valley Air Basin
Biological Resources	Plan Area and surrounding lands
Cultural Resources	Plan Area and surrounding lands
Energy	Plan Area/Statewide
Geology and Soils, and Paleontology	Plan Area and surrounding lands
Greenhouse Gas Emissions	Statewide/Global
Hazards and Hazardous Materials	Plan Area and surrounding lands
Hydrology and Water Quality	Plan Area and surrounding lands

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TABLE 4.0-1 (CONT'D)
GEOGRAPHIC SCOPE OF CUMULATIVE IMPACTS

Resource Topic	Geographic Scope
Land Use and Planning	Plan Area and surrounding lands
Noise	Plan Area and surrounding lands
Population and Housing	Plan Area and surrounding region
Public Services	Local service areas
Transportation	Regional and local transportation network
Tribal Cultural Resources	Plan Area and surrounding lands
Utilities and Service Systems	Westside Subbasin and local service areas
Wildfire	Plan Area and surrounding lands

4.0.5.3. CUMULATIVE PROJECTS LIST

Table 4.0-2 contains a list of past, present, and probable future projects within the Plan Area and vicinity. Specifically, the table includes projects which are listed “Completed/Operational,” at the time this PEIR was prepared. The table also includes projects listed as “Approved/Not Constructed,” or “Pending Approval.” These latter projects are assumed to have been approved and constructed, and to be operational by the time the construction of the first potential VCIP infrastructure projects would be expected to start in 2028 and the first solar and energy storage projects would be expected to start in 2029. As such, the cumulative analysis considers only the operational impacts of these cumulative projects and not the construction-related impacts since these projects are assumed to have been completed by 2028.

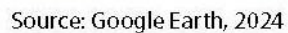
The locations of the cumulative projects are shown in Figure 4.0-1 and include those located within the VCIP Plan Area and lands within 10 miles beyond the Plan Area boundary. [Note: Although small portions of Merced and Madera counties are located within the 10-mile radius of the Plan Area, there are currently no projects within those areas for inclusion on the cumulative projects list.]

The cumulative projects list in Table 4.0-2 includes four project sites that are (or were) under the District’s ownership and have either been approved (e.g., Sonrisa Solar – No. 26, Darden Clean Energy – No. 27) or are pending approval (e.g., Heartland Solar – No. 27, ICF Rosemary Solar – No 32). These projects are included within DFAs in the proposed VCIP because, at the time of the issuance of the NOP for this PEIR in February 2024, these projects had not been approved and were still under the District’s ownership. Since these project sites are within the proposed VCIP DFAs, their potential development for solar/BESS facilities is evaluated as part of the proposed VCIP “project” in this PEIR. Since the potential impacts resulting from these projects are accounted for in the impact evaluations of the VCIP DFAs, they are not included in the evaluation of cumulative impacts in this PEIR. The inclusion of these projects in Table 4.0-2 and Figure 4.0-1 is provided for informational purposes only.

Numerous small projects have been proposed and approved in the VCIP vicinity over the past several years, including cell towers, infrastructure improvements, small residential subdivisions, adaptive reuse projects, and expansions of existing uses that involve minimal or no environmental impacts. Such minor projects are not included on the list in Table 4.0-2 since there is no potential that they would contribute to a cumulatively significant impact that may be associated with VCIP implementation.

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TABLE 4.0-2
COMPLETED, APPROVED, AND PENDING PROJECTS*

Map Ref.	Project	Acreage	PV / BESS Capacity (MW)	Status (As of 7/1/25)
	FRESNO COUNTY			
	<i>Renewable Energy Projects</i>			
1	Solis Oro Loma Solar	156	20	Completed/Operational
2	CalRenew-1 Solar	50	5	Completed/Operational
3	Citizen Solar B	40	5	Completed/Operational
4	North Star Solar	626	60	Completed/Operational
5	Little Bear Solar	1,288	180	Completed/Operational
6	Adams East Solar	319	37	Completed/Operational
7	Tranquillity Solar	3,732	400	Completed/Operational
8	Giffen Solar Park	320	20	Completed/Operational
9	PG&E Giffen Solar	200	10	Completed/Operational
10	PG&E Stroud Solar	130	20	Completed/Operational
11	GA Solar	319	27	Completed/Operational
12	PG&E Five Points Solar	160	15	Completed/Operational
13	PG&E Westside Solar	100	15	Completed/Operational
14	PG&E Cantua Solar	160	20	Completed/Operational
15	Whitney Point Solar	320	40	Completed/Operational
16	Westside Solar	160	20	Completed/Operational
17	Five Points Solar Park	500	69	Completed/Operational
18	Fifth Standard	1,400	170 PV / 100 BESS	Completed/Operational
19	PG&E Huron Solar	260	20	Completed/Operational
20	PG&E Gates Solar	60	20	Completed/Operational
21	Westlands Solar Farm	91	20	Completed/Operational
22	Scarlet Solar	4,069	400	Completed/Operational
23	CES Electron Farm One	40	5	Approved/Not Constructed
24	Luna Valley Solar	1,252	200	Approved/Not Constructed
25	Renewable Properties/Althea	57	10	Approved/Not Constructed
26	Sonrisa Solar**	1,700	200 PV / 60 BESS	Approved/Not Constructed
27	Heartland Solar**	1,116	300 PV	Pending Approval
28	Key Energy Storage	318	3,000 BESS	Approved/Not Constructed

* List includes projects located within VCIP Plan Area and within 10 miles outside VCIP boundary.

** These projects were not approved at the time of the issuance of the NOP on this PEIR in February 2024. Since these projects are on District-owned lands, they are included in the VCIP DFAs and their potential impacts are evaluated in this PEIR. Therefore, these projects are not included in the cumulative impact analysis. They are included in this table and in Figure 4.0-1 for informational purposes only.

Notes: MW = Megawatt; PV = solar photovoltaic; BESS = Battery Energy Storage System; CEC = California Energy Commission; CPUC = California Public Utilities Commission.

Sources: Counties of Fresno, Kings, Merced, & Madera 2025. Cities of Mendota, Firebaugh, Coalinga, Huron, San Joaquin, & Lemoore 2025.

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TABLE 4.0-2 (CONT'D)
COMPLETED, APPROVED, AND PENDING PROJECTS

Map Ref.	PROJECT	Acreage	PV / BESS Capacity (MW)	Status (As of 7/1/25)
FRESNO COUNTY (Cont'd)				
29	Panoche BESS	3.5	15 MW	Approved
30	Midway BESS	5.5	30 MW	Approved
31	Darden Clean Energy**	9,500	1,150 PV / 1,150 BESS	Approved (CEC)
32	ICF Rosemary Solar**	1,600	250 PV / 250 BESS	Pending Approval
33	BayWa r.e. /Cornucopia	1,613	300 PV / 300 BESS	Pending Approval
33A	San Luis West	770	125 PV / 30 BESS	Pending Approval
Other Projects in Fresno County (unincorporated)				
33B	Manning Substation	40	500/230 kV Substation + 12-mile 230-kV Gen-Tie	Pending Approval (CPUC)
34	Nees/I-5 Commercial	10	Freeway Commercial	Pending Approval
35	Stamoules Pistachio Plant	98	Ag Processing	Approved/Not Constructed
36	Kamm Ave Pistachio Plant	316	Ag Processing	Pending Approval
37	Ag Comm Center – 269/198	39	Ag Commercial	Pending Approval
38	Seneca Resources	25,749	New oil wells & oil facility upgrades	Pending Approval
39	Turk Station Pistachio Plant	395	Ag Processing	Pending Approval
40	SR-198/I-5 Commercial	27	Freeway Commercial	Pending Approval
City of Firebaugh				
41	La Joya Commons	2	28 Multi-Family	Approved/Under Construction
KINGS COUNTY				
Renewable Energy Projects				
42	Sun City	180	20	Completed/Operational
43	Sand Drag	240	19	Completed/Operational
44	Avenal Park	86	9	Completed/Operational
45	Mustang/Orion/Kent South	1,882	200	Completed/Operational
46	American Kings	978	125	Completed/Operational
47	Kansas	200	20	Completed/Operational
48	Kansas South	230	20	Completed/Operational
49	Riverwest	836	136	Completed/Operational

* List includes projects located within VCIP Plan Area and within 10 miles outside VCIP boundary.

** These projects were not approved at the time of the issuance of the NOP on this PEIR in February 2024. Since these projects are on District-owned lands, they are included in the VCIP DFAs and their potential impacts are evaluated in this PEIR. Therefore, these projects are not included in the cumulative impact analysis. They are included in this table and in Figure 4.0-1 for informational purposes only.

Notes: MW = Megawatt; PV = solar photovoltaic; BESS = Battery Energy Storage System; CEC = California Energy Commission;

CPUC = California Public Utilities Commission.

Sources: Counties of Fresno, Kings, Merced, & Madera 2025. Cities of Mendota, Firebaugh, Coalinga, Huron, San Joaquin, & Lemoore 2025.

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TABLE 4.0-2 (CONT'D)
COMPLETED, APPROVED, AND PENDING PROJECTS

Map Ref.	PROJECT	Acreage	PV / BESS Capacity (MW)	Status (As of 7/1/25)
KINGS COUNTY (Cont'd)				
50	Kettleman	220	20	Completed/Operational
51	Java	96	15	Completed/Operational
52	Lemoore 14	60	8	Completed/Operational
53	Mustang 2	1,450	150	Completed/Operational
54	Slate	2,490	300	Completed/Operational
55	Westside/Almond	208	22	Completed/Operational
56	Aquamarine	1,825	250	Completed/Operational
57	Solar Blue	1,895	250	Completed/Operational
58	Chestnut/Castanea	1,080	150	Completed/Operational
59	Grape	1,759	250	Approved/Not Constructed
60	Cherry	2,079	250	Approved/Not Constructed
61	Daylight Legacy	2,107	300	Approved/Not Constructed
62	Kings CSG 1	30	5	Approved/Not Constructed
63	Kings CSG 3	20	3	Approved/Not Constructed
Other Projects in Kings County (unincorporated)				
64	Sandridge LP Cattle	135	Ag Processing (~72K sf)	Approved/Not Constructed
City of Lemoore				
65	Peoples Properties	137	Cannabis Cultivation	Completed/Operational
66	Lemoore Tract 935 Project	30	148 Single-Family, 200 Multi-Family, 20,000 sf Retail	Approved/Under Construction
67	Lacey Ranch	156	547 Single-Family, 204 Multi-Family	Approved/Not Constructed
68	Helena Agri-Enterprises	31	Fertilizer Plant	Approved/Not Constructed
69	Maverik	21	Gas Station & Industrial Park	Approved/Not Constructed
70	Lemoore Tract 848	54	362 Single-Family Res	Approved/Not Constructed

* List includes projects located within VCIP Plan Area and within 10 miles outside VCIP boundary.

Notes: MW = Megawatt; PV = solar photovoltaic; BESS = Battery Energy Storage System; CEC = California Energy Commission;
CPUC = California Public Utilities Commission.

Sources: Counties of Fresno, Kings, Merced, & Madera 2025. Cities of Mendota, Firebaugh, Coalinga, Huron, San Joaquin, & Lemoore 2025.

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4.0.5.5. SUMMARY OF PROJECTIONS

As noted above, the cumulative analysis in this PEIR employs a blend of the two methods for establishing the cumulative environment. These include the “project list” approach discussed above and the “summary of projections” approach which is defined as “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, section 15130(b)). The following summary of projections for the VCIP is based on the relevant information from Fresno County General Plan and other planning documents applicable to the Plan Area and immediately surrounding areas. The intent of this approach is to characterize the extent and pattern of cumulative development through 2040 when the construction of potential VCIP projects will have been completed and all potential VCIP facilities will be operational. As is the case with the list approach, the ‘cumulative study area’ extends for 10 miles beyond the boundaries of the VCIP Plan Area.

Fresno County

The VCIP Plan Area is located entirely within the Westside Valley Area sub-region as defined in the County’s recently adopted General Plan (General Plan) update. This sub-region consists largely of unincorporated land and the incorporated cities of Mendota, Firebaugh, Coalinga, and Huron. The General Plan Land Use Diagram designates almost all of the unincorporated land east of I-5 as “Agriculture” with the exception of the Mendota Wildlife Area which is designated “Open Space.” The “Agriculture” designation provides for production of crops and livestock, and the location of agricultural commercial centers and processing facilities, and very low density rural residential development (i.e., 20-acre minimum parcel size). Small portions of the Plan Area located west of I-5 are designated “Westside Rangeland” which provides for grazing and other agricultural operations, mining, oil and gas development, and open space uses. The lands adjacent to I-5 are designated “Westside Freeway Corridor Overlay” which covers lands within one-mile of the freeway on both sides. This overlay provides for visitor-serving commercial land uses (e.g., hotels, service stations, restaurants, and other uses) at designated interchanges. The southwestern portion of the Plan Area lies within the “Coalinga Regional Plan Area” which consists of the unincorporated area around the City of Coalinga and includes agricultural and rangeland, mineral resource areas, oil fields, and open space (Fresno County 2024b).

The fundamental policy directive of the General Plan is to direct urban development to cities and unincorporated communities. The County’s growth projections for the unincorporated and incorporated areas within and adjacent to the VCIP Plan Area indicate an overall population increase of approximately 7,250 persons between 2025 and 2040, reflecting an overall 10.3 percent increase or an average annual growth rate of 0.75 percent over the 15-year period (CDOF 2024). Most of this growth is expected to occur in the cities of Mendota, Firebaugh, and Coalinga, with smaller growth increments projected for the cities of Huron and San Joaquin and the unincorporated communities of Cantua Creek, Three Rocks/El Porvenir, and Tranquillity (Fresno County 2023b). The general plans for the mentioned cities include ample areas designated for residential and accompanying non-residential development that would accommodate the projected growth through 2040 (Fresno County 2024b, City of Mendota 2009, City of Firebaugh 2009, City of Coalinga 2009, City of Huron 2007, City of San Joaquin 2014).

Kings County

The southeastern portion of the VCIP Plan Area is located adjacent to the southwestern portion of Kings County. The areas of Kings County located within approximately 10 miles of the VCIP boundary consist mainly of

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unincorporated lands, as well as the cities of Lemoore and Avenal, the unincorporated communities of Kettleman City and Stratford, and Naval Air Station Lemoore. The Kings County General Plan designates most of the unincorporated rural areas as General Agriculture and designates lands in the vicinity of NAS Lemoore as Exclusive Agriculture. The Kings County General Plan's land use policy is to direct urban growth in the unincorporated area to the communities of Kettleman City and Stratford (Kings County 2010a).

Between 2025 and 2040, the Kings County's total population (incorporated and unincorporated) is projected to increase by approximately 7,000 persons, reflecting an overall increase of 4.6 percent or an average annual growth rate of 0.3 percent over the 15-year period (CDOF 2024). The population of NAS Lemoore is expected to remain flat (Kings County 2010a). Most of the projected growth is expected to take place in the incorporated cities and unincorporated communities. The general plans for the mentioned cities and communities include ample areas designated for residential and accompanying non-residential development that would accommodate the projected growth through 2040 (Kings County 2010a, City of Lemoore 2008, City of Avenal 2018).

Merced County

A sliver of southwestern Merced County lies within 10 miles of the northernmost extent of the VCIP Plan Area. The areas of Merced County located within this portion of the VCIP cumulative study area consist entirely of sparsely populated and unincorporated rural lands bisected by the I-5 freeway. Within this area, the Merced County General Plan designates the lands east of I-5 as "Agricultural" and the lands west of I-5 as "Foothill Pasture." These are areas where agricultural land is to be protected, and where agricultural processing and support functions are to be accommodated. The area around the I-5/Nees Avenue Interchange is designated "Highway Interchange Center" which is intended to accommodate commercial uses oriented to highway travelers (Merced County 2013).

Between 2025 and 2040, the Merced County's total population (incorporated and unincorporated) is projected to increase by approximately 32,000 persons, reflecting an overall increase of 10.7 percent or an average annual growth rate of 0.75 percent over the 15-year period (CDOF 2024). It is expected that most of this growth will occur in the incorporated cities and unincorporated communities in the County, and that very little of this population increase and associated development will occur within the VCIP cumulative study area.

Madera County

A relatively narrow band of Madera County located along the northeast bank of the San Joaquin River is located within the VCIP cumulative study area. This area consists entirely of cultivated and fallowed farmlands with one dairy and two agricultural processing facilities. The Merced County General Plan designates this entire area as "Agriculture" which primarily allows agricultural uses and support service uses and similar and compatible uses (Madera County 1995).

Between 2025 and 2040, Madera County's total population (incorporated and unincorporated) is projected to increase by approximately 3,500 persons, reflecting an overall increase of 2.2 percent or an average annual growth rate of 0.15 percent over the 15-year period (CDOF 2024). It is expected that most of this growth will occur in the incorporated cities and unincorporated communities in the County, and that very little of this population increase and associated development will occur within the VCIP cumulative study area.

It should be noted that three of the above counties (Fresno, Kings, Merced) allow solar generating facilities within Agricultural zones subject to the approval of a Conditional Use Permit. All known solar projects within the cumulative study area are listed in Table 4.0-2 above. While additional solar and electrical infrastructure projects may be proposed within the study area between 2025 and 2040, any attempt to estimate the location, size, and {00081326.1}

timing of such projects would be too speculative to contribute to meaningful analysis (see CEQA Guidelines, section 14145).

4.0.6. References

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4.1. AESTHETICS

This section includes the following discussion and analysis related to aesthetics/visual resources: existing environmental setting and regulatory context; methodology and criteria for evaluating impacts; and the results of the impact assessment, including identification of potentially significant impacts and corresponding mitigation measures to avoid or substantially lessen such impacts to the extent feasible. The concepts and methods employed in this section are based, in part, on guidance from the Federal Highway Administration (FHWA)(FHWA 2015).

PEIR Scoping Comments

During the PEIR scoping process, the District received one letter containing a comment regarding aesthetics (see PEIR Scoping Report in Appendix A of this document). This comment is quoted in full below.

Leadership Counsel for Justice & Accountability

I. Aesthetics: “The EIR must evaluate any visual, aesthetic, light and glare impacts implementing the VCIP will have on communities near the VCIP projects.”

[Note: Potential aesthetic/aesthetic and lighting/glare impacts are addressed in Section 4.1.3. *Environmental Impact Analysis*, below.]

4.1.1. Environmental Setting

Introduction

The aesthetic value of an area is defined by its visual character and quality combined with viewer sensitivity to the visual environment. These components of aesthetic value are described below.

Visual Quality and Character

Visual quality is defined as the overall visual impression or attractiveness of an area as determined by the particular landscape characteristics, including landforms, rock forms, water features, vegetation patterns, and built environment features and infrastructure. The attributes of line, form and color combine in various ways to create landscape characteristics whose variety, vividness, coherence, uniqueness, harmony, and pattern contribute to the overall visual quality of an area.

Viewer Sensitivity

Visual sensitivity depends on the number and type of viewers and the frequency and duration of views. Typically, visual sensitivity increases with an increase in the total numbers of viewers, the frequency of viewing (e.g., daily vs. seasonally), and the duration of views. Generally, the dominance and importance of an object increases with its proximity to the viewer, although distance zones (i.e., foreground, middle-ground, or background) in viewsheds may vary between different geographic regions or types of terrain. The standard foreground distance zone is 0.25 to 0.50 miles from the viewer, the middle-ground distance zone extends from the foreground zone to 3 to 5 miles from the viewer, and the background zone extends from the middle-

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ground zone to the limit of human sight. Generally, visual contrast in the foreground would be more noticeable to viewers than increased visual contrast in background zones. Viewer sensitivity also depends on whether the viewer is a resident, a motorist, a commercial employee, or a recreational user, as described in the following:

- Residents typically have high sensitivity to visual changes, since residential viewer groups have stationary and long-term views of the landscape.
- Motorists on local roads and freeways include residents, workers, and commuters driving to businesses in the area. Drivers generally have low sensitivity to visual changes since their views are of short duration and because they are more concerned with surrounding traffic, road signs, and their immediate surroundings within their vehicle rather than visual features in the landscape.
- Commercial employees have low to moderate sensitivity to visual changes because they are more focused on operational tasks and less focused on the greater surrounding visual environment.
- Recreational groups are likely to be highly sensitive to visual changes because they are more focused on their surroundings while engaged in outdoor recreation.

Visual Character and Quality of the VCIP Plan Area

The Plan Area consists entirely of flat lands on the floor of the west side of the San Joaquin Valley. It is generally bounded on the west by the foothills of the Coastal Ranges, on the north by West Nees Avenue, on the east by the Fresno Slough, and the south by the Fresno/Kings County boundary. The terrain is generally level, with a slight downgradient to the northeast. The Plan Area contains no rivers, and a few creeks emerge from the western foothills and terminate on the west side of the valley in self-contained watersheds with no outlets.

Over the past 100 years, the landscape of the Plan Area has been highly modified for large-scale agricultural cultivation for various row crops, tree crops, and vineyards, along with substantial acreage fallowed each year. The Plan Area includes several small rural communities such as Cantua Creek and Three Rocks/El Porvenir, with larger communities like Mendota, and Coalinga located just outside the Plan Area boundaries. The City of Huron is surrounded by the VCIP Plan Area, but it is not within the Westlands service area and is not included in the VCIP Plan Area. Otherwise, the area is sparsely settled with ranch complexes, individual dwellings, and clusters of dwellings (former and current farmworker housing), two elementary schools, and one church dispersed throughout the area. Established built landscape features also include agricultural processing facilities, cold storage facilities, material storage yards, irrigation canals and ditches, overhead powerlines and substations. Large infrastructure facilities such as the California Aqueduct and several high-voltage transmission lines traverse the length of the Plan Area. Interstate-5 (I-5) runs along the west side of the Plan Area and serves as the primary regional transportation corridor. A network of State Routes (SR) and County Roads extends throughout the Plan Area, but traffic on these roadways is very light and locally-oriented. Other built environment features include a federal prison, a UC research facility, Naval Air Station Lemoore, and several highway commercial centers along the I-5 corridor. (For a detailed description of existing land use in the Plan Area, along with detailed maps and representative photos, see Section 3. *Environmental Setting*.)

The Plan Area also includes several large and medium-sized solar generating facilities, including 22 operating facilities on approximately 14,460 acres, and an additional 12 pending and approved solar and energy storage

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projects planned for about 17,975 acres in the Plan Area. These projects include supporting infrastructure such as on-site substations and gen-tie lines that connect these facilities to three large regional collection substations/switchyards located in the Plan Area.

Vegetation in the Plan Area mainly consists of agricultural crops, with tree crops such as almonds and pistachios comprising almost half of the total cultivated acreage. Otherwise, the Plan Area is notably sparse in tree cover, except for scattered stands of introduced tree and shrub species in the small rural communities, and around the dispersed ranches and individual residences. Some native trees and vegetation remain in the remnant riparian corridors along the small natural drainage courses on the west side of the valley such as Panoche and Cantua Creeks, and Arroyo Pasajero. Additionally, there are a few areas of natural and naturalizing vegetative cover, including: the Pleasant Valley Ecological Preserve, which is partially located within the Plan Area near Coalinga; the Arroyo Pasajero Westside Detention Basin located north of Huron, and the Pilibos Wildlife Area located adjacent to the San Luis Canal north of N. Panoche Road.

There are also several wildlife areas near and adjacent to the Plan Area. These include the Mendota State Wildlife Area, the Alkali Sink Ecological Reserve, and the Alkali Sink Mitigation Bank, which are located east of Mendota and just outside the Plan Area. Other nearby wildlife areas include the Helm Wetlands Preserve located adjacent to the Plan Area near the community of Helm, and the Five Points Wetlands Preserve located northeast of Five Points. Some of these areas offer opportunities for low-intensity recreational use such as hiking, bird watching, and hunting.

Overall, the Plan Area has the appearance of having been highly modified by large-scale agricultural use, as well as the introduction of large-scale regional infrastructure, and more recently by the repurposing of large areas of farmland for renewable energy facilities. The Plan Area is distinctive for open views from the valley floor across its vast level terrain, but visibility is often limited by hazy conditions caused by thermal inversions, especially in the winter months. Also, there are few if any recognized scenic resources within the Plan Area, and it does not have a strong visual connection with the western foothills which form a distant backdrop. Thus, the overall visual quality of the Plan Area is considered low to moderate.

Scenic Resources

Scenic resources are those natural and built landscape patterns and features that are considered visually or aesthetically pleasing and, therefore, contribute positively to the definition of a distinct community or region. The Plan Area is distinctive for the open views across the flat valley floor. However, the landscape has been highly modified for large scale agricultural and renewable energy use and retains little if any of its original natural attributes. When atmospheric conditions are clear, the foothills of the Coast Ranges are visible to the west. Although the foothills are a recognized scenic resource, they form the distant background from viewpoints in the Plan Area and are not visually dominant elements in the landscape.

Since the western foothills rise gradually from the valley floor, there are no panoramic views available from high vantage points to the west. There are no designated public viewpoints in the adjacent foothills, and there are few if any hiking trails in the foothills that would provide pedestrian access to any higher elevation vantage points. The two main highways that emerge from the foothills (SR-33 and SR-198) descend gradually into the valley, but the visually accessible approaches are at relatively low elevations of a few hundred feet. While long distance views across the valley are fleetingly available along the descending segments of these highways, these

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long low-level views are visually flat, lack contrast, and have no distinctive features and are not considered scenic vistas.

The Fresno County General Plan Background Report describes the general scenic qualities of the County and makes note of the Coastal Range foothills west of I-5 and the importance of preserving the unique and open character of these rangelands (Fresno County 2023). The Fresno County General Plan designates the foothills west of I-5 as the Westside Rangeland planning area where one of the main policy objectives is to “maintain the scenic open space character of the rangelands including view corridors of highways” (Policy LU-B.11). New development is required to protect the visual qualities of the area and minimize the visibility of structures on hillsides, steep slopes, and canyons (Fresno County 2024b). No lands within the Plan Area are in the Westside Rangeland planning area and, as such, the Plan Area is not part of this recognized scenic resource. From most of the Plan Area, the foothills of the Coast Ranges appear as low ridges on the horizon in distant views to the west and make up a very small portion of the overall field of view for observers within the Plan Area (see Figure 4.1-2 – Photo 5, in Section 4.1.3.1 *infra*). Although the foothills are distantly visible on the horizon in long views from within the Plan Area, the dominant characteristics of these views are their flatness and lack of distinctive features. Thus, these views are not considered scenic vistas.

The Plan Area includes two scenic routes designated by Fresno County in the General Plan. These include the segment of SR-198 running west from I-5 to the Monterey County line, and the entire length of I-5 within Fresno County. The scenic value of the I-5 corridor is given special recognition in the General Plan, where it serves as the focus for the “Westside Freeway Corridor Overlay” land use designation. The General Plan includes specific goals and policies applicable to the Westside Freeway Corridor, including protection of scenic views along the freeway, particularly of the western hillsides. The overlay designation applies to lands within one mile on both sides of the freeway, where commercial uses are allowed at interchanges, and other lands are limited to agricultural uses with minimum lot sizes of 40 acres. As discussed in Section 4.11. *Land Use and Planning*, solar energy facilities are allowed uses in agricultural zones in Fresno County.

The eastern border of the Plan Area is near the Mendota Wildlife Area which lies across Santa Fe Avenue and the disused San Luis Drain to the east. The nearby portions of the wildlife area are characterized by scattered pockets of emerging natural vegetation, which has moderate visual quality as viewed from the nearby Plan Area, and is not considered a scenic resource. There are no historic buildings, rock outcroppings, significant trees or other scenic resources within or near the Plan Area.

Viewers and Viewer Sensitivity

The Plan Area includes several types of viewer groups, primarily residents, motorists, commercial employees, and recreational users. Viewer sensitivity, one of the factors for evaluating visual impact, can be divided into high, moderate, and low sensitivity. Determinants of viewer sensitivity include viewer activity, view duration and viewing distance, and other factors such as degree of attentiveness to visual surroundings. The sensitivity of each viewer group in the Plan Area is discussed below.

Residents

This viewer group includes inhabitants of the Plan Area, including residents of the communities of Cantua Creek, Three Rocks/El Porvenir, Five Points, and Westside, as well as residents of ranch complexes, housing clusters, and individual dwellings dispersed throughout the Plan Area. In most instances, the small communities, ranches, and residential properties in the Plan Area include mature trees and other vegetation that provide a measure {00081327.1}

of screening from the surrounding environment at these locations. Residential viewer groups typically have high sensitivity to visual changes, since they have stationary and long duration views of the landscape subject to the changes.

Motorists

This viewer group includes people traveling on public roadways in the Plan Area. These roadways include a heavily traveled portion of I-5 along the west side of the Plan Area, and the lightly traveled State Highways and County Roads that provide local transportation access to agricultural, commercial, and residential uses within the Plan Area. Motorists on I-5 generally consist of regional travelers who occasionally pass through the area, whereas motorists on local roadways are generally those who travel the area frequently and are familiar with the visual setting. Roadway views may be long or short in duration, and in some locations, motorists' views are screened by roadside vegetation such as orchards and occasional stands of mature trees. The sensitivity of this viewer group is considered to be low to moderate.

Commercial Employees

This viewer group includes agricultural workers, employees at agricultural processing facilities, retail workers at highway commercial centers, and others. While engaged in their occupations (not commuting) these viewers may be in proximity to potential VCIP energy or infrastructure projects. The sensitivity of this viewer group is considered low to moderate for the reasons described above.

Recreational Users

This viewer group includes those who utilize recreational opportunities in the area. The recreational destinations in and near the Plan Area include the Mendota Wildlife Area and the Pilibos Wildlife Area. These areas offer low intensity recreational activities such as hunting, wildlife viewing, and hiking. The sensitivity of this viewer group is considered high for the reasons described above, although the number of recreationalists visiting these wildlife areas is low.

4.1.2. Regulatory Context

The following is an overview of the principal statutes, regulations, plans and programs related to utilities and service systems that may apply to implementation of the proposed VCIP.

Federal

There are no federal regulations, plans, or policies pertaining to aesthetics that are applicable to the VCIP. It is noted that the FHWA's "Guidelines for Visual Assessment of Highway Projects" (FHWA 2015) provided guidance for this impact assessment, but it does not have the effect of policy or regulation with regard to the VCIP.

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State of California

California Scenic Highway Program

California’s Scenic Highway Program was created in 1963 to preserve and protect scenic highway corridors from changes that would diminish the aesthetic value of lands adjacent to highways. The State Scenic Highway System includes a list of highways that are either designated as scenic highways or eligible for such designation. 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.

In western Fresno County, the only state-designated scenic highway is the “eligible” segment of SR-198 extending west from I-5 near Coalinga to the Monterey County line. This highway segment is 33 miles long in Fresno County, of which less than one (0.75) mile is in the western margin of Plan Area (Caltrans 2024). The Fresno County General Plan designates the same segment of SR-198 as a scenic highway, and designates the entire length of I-5 within Fresno County as a scenic highway (Fresno County 2024).

Fresno County

Fresno County General Plan

The Fresno County General Plan (Fresno County 2024b) contains the following goals and policies related to aesthetics that are relevant to implementation of the proposed VCIP:

Open Space and Conservation Element

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**

Scenic Resource Preservation
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**

Incorporating Scenic Features
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.

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Policy OS-L.1

Scenic Roadway System

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 Scenic Roadways List below. Figure OS-1 shows the locations of the designated roadways.¹

Policy OS-L.3

Scenic Roadway Management

The County shall manage the use of land adjacent to scenic drives and scenic highways based on the following principles:

- a. Timber harvesting within or adjacent to the right-of-way shall be limited to that which is necessary to maintain and enhance the quality of the forest;
- 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.
- c. Installation of signs visible from the right of way shall be limited to business identification signs, on site real estate signs, and traffic control signs necessary to maintain safe traffic conditions. All billboards and other advertising structures shall be prohibited from location within view of the right-of-way;
- d. Intensive land development proposals including, but not limited to, subdivisions of more than four lots, commercial developments, and mobile home parks shall be designed to blend into the natural landscape and minimize visual scarring of vegetation and terrain. The design of said development proposals shall also provide for maintenance of a natural open space area two hundred (200) feet in depth parallel to the right of way. Modification of the setback requirement may be appropriate when any one of the following conditions exist:
 1. Topographic or vegetative characteristics preclude such a setback;
 2. Topographic or vegetative characteristics provide screening of buildings and parking areas from the right-of-way;
 3. Property dimensions preclude such a setback; or
 4. Development proposal involves expansion of an existing facility or an existing concentration of uses.
- e. Subdivision proposals shall be designed to minimize the number of right-of-way access drives;
- f. Developments involving concentration of commercial uses shall be designed to function as an integral unit with common parking areas and right-of-way access drives; and
- g. Outside storage areas associated with commercial activities shall be completely screened from view of the right-of-way with landscape plantings or artificial screens which harmonize with the natural landscape.

¹ The Scenic Roadways List identifies the following Fresno County Designated Scenic Highways in the vicinity of the VCIP Plan Area:

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

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Agriculture and Land Use Element

B. Westside Rangelands

GOAL LU-B To preserve the unique character of the Westside Rangelands, which includes distinctive geologic and topographic landforms, watersheds, important agricultural activities, and significant biological resources, while accommodating agriculture, grazing, recreation, resource recovery, and other limited uses that recognize the sensitive character of the area.

Policy LU-B.11 Scenic Rangelands Protection

The County shall require that new development requiring a County discretionary permit be planned and designed to maintain the scenic open space character of rangelands including view corridors of highways. New development shall use natural landforms and vegetation in the least visually disruptive way possible, and use design, construction and maintenance techniques that minimize the visibility of structures on hillsides, ridgelines, steep slopes, and canyons.

D. Westside Freeway Corridor

The General Plan includes specific policies governing development along the I-5 Corridor. The General Plan designates lands within one mile on both sides of the freeway as “Westside Freeway Corridor Overlay.” The General Plan goal and policies applicable to the Westside Freeway Corridor are intended to manage commercial development to preserve the scenic amenities along the freeway corridor. Specific interchanges are designated for commercial development or are limited to agricultural uses. All other lands within one mile of the freeway are limited to agricultural uses with minimum lot sizes of 40 acres (Fresno County 2024). As discussed in Section 4.11. *Land Use and Planning*, solar energy facilities are allowed uses in agricultural zones in Fresno County.

Fresno County Zoning Ordinance

Section 820.3.080 of the County Zoning Ordinance sets forth performance standards for “Exterior Light and Glare.” Subsection A. 1. a. provides that exterior lighting shall be “[d]irected downward and shielded so that all direct light and glare is confined within the boundaries of the subject parcel, thereby minimizing off-site glare.” Subsection A.2.b.(1) provides that exterior lighting shall not result in: “[i]ndirect illumination of abutting properties in excess of 0.5-foot candles” (Fresno County 2024c).

Section 808.2.040 of the County Zoning Ordinance contains the General Development Standards for Agricultural Zones, including minimum parcel size, minimal setbacks, and maximum structure height. Minimum setbacks from the property line to nearest structure are 35 feet for the front setback and 20 feet for side and rear setbacks. Maximum structure height is 35 feet, although the County routinely grants variances for taller structures such as transmission towers.

Section 804.1.030(B)(9). of the County Zoning Ordinance (Exemptions from Land Use Permit Requirements) provides that “alteration, construction, erection, or maintenance by a public utility or public agency of underground or overhead utilities . . . shall be allowed in any zone.”

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4.1.3. Environmental Impact Analysis

METHODOLOGY

This section analyzes the potential for implementation of the VCIP to result in significant environmental impacts related to aesthetics based on a review of maps, plans, and published documents that may be relevant to the VCIP Plan Area, including: the Fresno County General Plan and Ordinance Code; technical reports and guidance from Caltrans and FHWA, and other published sources cited in Section 4.1.4. *References*. The impact analysis is also based on extensive site reconnaissance and photography, and considers current policies and regulatory requirements that may apply to implementation of potential VCIP projects, including those identified in Section 4.1.2. *Regulatory Context*, above. The evaluation is based on visual character and quality under existing conditions and considers the changes in visual quality resulting from proposed VCIP implementation in terms of the visual sensitivity of various viewer groups within the Plan Area.

SIGNIFICANCE CRITERIA

Based on Appendix G of the state CEQA Guidelines, implementation of the VCIP would be considered to result in a potentially significant impact related to aesthetics if it would:

- a. Have a substantial adverse effect on a scenic vista.
- b. Substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.
- c. In nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings, or, in an urbanized area, conflict with applicable zoning and other regulations governing scenic quality.
- d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

4.1.3.1. DIRECT AND INDIRECT EFFECTS

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

The VCIP Plan Area is not part of a recognized scenic vista, nor are scenic vistas available from the Plan Area; therefore, VCIP implementation would not have a substantial adverse effect on a scenic vista. (*Less-than-Significant Impact*)

The Plan Area consists of essentially flat agricultural land that is typical of the west side of the San Joaquin Valley, with no topographic variation or features to provide visual interest or vantage points for panoramic views or scenic vistas. The Plan Area is distinctive for flat open views from the valley floor across its vast level terrain. However, the landscape has been highly modified for large scale agricultural and renewable energy uses

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and retains little if any of its original natural attributes. Additionally, persistent temperature inversions result in hazy conditions which commonly limit visibility to relatively short distances, especially during the winter months. Under clear conditions, the foothills of the Coast Ranges are visible to the west. Although the foothills are a recognized scenic resource, they form the distant background from viewpoints in the Plan Area and are not visually dominant elements in the landscape. There are no views from the valley floor that are considered scenic vistas.

As discussed in Section 4.1.1. *Environmental Setting*, the western hillsides contain few viewing opportunities over the Plan Area. There are no designated public viewpoints in the western foothills. Two State Routes (SR-33 and SR-198) emerge from the lower foothills at relatively low elevations where low angle overviews of the valley are fleetingly available in the distance and are visually flat and undistinctive. The brief low quality long-distance views available from these highways are not considered scenic vistas.

The structural elements of potential VCIP projects would consist mainly of low-profile solar arrays, narrow profile transmission towers, and dispersed substations which would not block views of the foothills. Although the VCIP projects would result in physical changes to each project site, they would not have a substantial adverse effect on a scenic vista. [Note: The visual effects of temporary construction activity are addressed under Impact AES-3.]

Implementation of the VCIP Energy Resource and Infrastructure Plans would not result in a substantial adverse effect on a scenic vista, and the impact would be *less than significant*.

Mitigation Measures: No mitigation is required.

Impact AES-2. Substantially Damage Scenic Resources

Implementation of the VCIP Energy Resource and Infrastructure Plans would not substantially damage scenic resources. (*Less-than-Significant Impact*)

Under this criterion, a significant impact would occur if the project would result in substantial damage to scenic resources including but not limited to trees, rock outcroppings, or historic buildings within a state scenic highway. As discussed in Section 4.1.1. *Environmental Setting*, there are no historic buildings, rock outcroppings, or notable trees or other scenic resources within the VCIP Plan Area. Potential impacts to scenic highways are discussed below.

The nearest state scenic highway in western Fresno County is the segment of SR-198 extending west from I-5 to the Monterey County line, which is designated as an eligible state scenic highway, and is also designated in the Fresno County General Plan as a scenic highway. An approximately 0.75-mile segment of SR-198 west of I-5 is located within the Plan Area. In this highway segment, the roadside views are dominated by the gas stations, restaurants, and motels associated with the nearby I-5 interchange. This highway commercial center does not have visual attributes that contribute to this highway's designation as a scenic highway. Additionally, no VCIP energy or infrastructure elements are planned in the vicinity of the SR-198 scenic highway, with the

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nearest Development Focus Area (DFA) located 2.3 miles northeast where it would be barely visible in long-distance views from the highway. Therefore, the implementation of VCIP energy and infrastructure projects would not substantially damage the SR-198 scenic highway corridor as a scenic resource.

The Fresno County General Plan also designates the entire length of I-5 within the County as a scenic highway. The scenic value of the I-5 corridor is given special recognition in the General Plan, where it serves as the focus for the “Westside Freeway Corridor Overlay” land use designation. The General Plan includes specific goals and policies applicable to the Westside Freeway Corridor, including protection of scenic views along the freeway. The overlay designation applies to lands within one mile on both sides of the freeway, where commercial uses are allowed at interchanges, and other lands are limited to agricultural uses with minimum lot sizes of 40 acres. (As discussed in Section 4.11. *Land Use and Planning*, solar energy facilities are allowed uses in agricultural zones in Fresno County.) General Plan Policy OS-L.3 requires a 200-foot setback between the scenic highway right-of-way and any new development. It is anticipated that the General Plan setback requirement would be included in the conditions of approval for affected VCIP projects.

The VCIP Energy Resource Plan includes several DFAs that are partially within one mile of I-5. Of the total 56-mile length of I-5 within the Plan Area, it is anticipated that potential solar and energy storage facilities would be intermittently spaced alongside the east side of the freeway for about 5.8 miles in total. This distance would be spread over six potential VCIP projects located along the freeway, with the largest solar project extending for 3.6 miles along the east side of the freeway north of the SR-33 interchange. The views of most of the solar facilities would be brief with the longest duration view of solar arrays lasting about three minutes at freeway speeds along the east side of the freeway, with the longest duration view along the west side of the freeway approximately two minutes. The other five solar projects would vary in extent from 0.1 to 1.2 miles along the east side of the freeway. The solar arrays would be low in profile and would be clearly visible in the foreground views beyond the required 200-foot setback zone. The arrays in front would partially screen the arrays behind, which would blend their appearance over distance to form a dark line on the horizon. The solar projects would include substations and power pole lines that would be visible in the middle or far ground but would not substantially interrupt the flat horizon line formed by the solar arrays and agricultural fields in the overall view. Since the adjacent agricultural lands on the east side of the freeway are not considered a scenic resource, the intermittent appearance of low profile solar facilities and infrastructure within the brief eastward views from the freeway would not represent substantial damage to a scenic resource.

On the west side of the freeway, the VCIP Energy Resource Plan includes three DFAs that would extend alongside the freeway for a combined distance of 2.3 miles, with potential projects ranging in length from 0.4 to 1.0 mile along the west side of the freeway at intermittent locations over a distance of 28 miles. These potential projects would occupy flat land in the foreground with foothills visible in the background. The solar arrays would be low in profile and would be clearly visible in the foreground views beyond the required 200-foot setback zone, with the arrays visually blending together over distance. The solar projects would include substations and power pole lines that would be visible in the middle or far ground but would not substantially affect views of the foothills in the background. For motorists on the freeway, views of the solar projects would be brief (less than a minute along each project, for a combined duration of about two minutes). Overall, as it would take a motorist about 50 minutes (at 70 mph) to drive through the Plan Area from end to end, views of the foothills from the west side of the freeway would be substantially similar under the VCIP as under baseline conditions. Thus, while the views of the western foothills from I-5 are considered a scenic resource, the implementation of VCIP solar and energy storage projects within these views would not substantially damage this scenic resource.

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The VCIP Infrastructure Plan includes one element that would cross over I-5, which is the 20-mile transmission line connecting Substation 3 to the future Manning Substation on the west side of I-5. This 500-kV transmission line would consist of a line of tubular steel monopoles up to 180 feet tall, placed at intervals of approximately 1,000 feet. Motorists on I-5 would have clear views of the overhead conductor cables and the monopoles a few hundred feet away on both sides of the freeway. The poles would be narrow in profile compared to traditional steel lattice towers, and given the speed of traffic flow, the fleeting view of the transmission line and towers would not dominate the overall viewing experience for passing motorists. Also, the western foothills are at least three miles west of I-5 at this location. While the foothills are considered a scenic resource, the VCIP transmission line that would cross over to the west side of I-5 to the Manning Substation would not substantially damage this scenic resource given its location and narrow profile.

The I-5 corridor runs adjacent to the foothills of the Coast Ranges which are designated in the Fresno County General Plan as the “Westside Rangelands,” where one of the main policy objectives is to “maintain the scenic open space character of the rangelands including view corridors of highways” (Policy LU-B.11). As such, the western foothills are considered a scenic resource. There are no VCIP energy or infrastructure projects anticipated within the Westside Rangelands area, and VCIP implementation would not damage this scenic resource.

The predominant scenic resource in the vicinity of the Plan Area consists of the foothills of the Coast Ranges, which border the Plan Area on the west. Associated with this scenic resource are scenic highway segments of SR-198 and I-5. The potential VCIP energy and infrastructure projects anticipated in the vicinity of the foothills and scenic highways would not have a substantial visual effect on these features. There are no other scenic resources such as trees, rock outcroppings, or historic buildings in the Plan Area or vicinity. Therefore, the implementation of the VCIP Energy Resource and Infrastructure Plans would not substantially damage scenic resources, and the impact would be *less than significant*.

[Note: The visual effects of temporary construction activity are addressed under Impact AES-3.]

Mitigation Measures: No mitigation is required.

Impact AES-3. Substantially Degrade Existing Visual Character and Quality and Compliance with Applicable Zoning Regulations

Implementation of the VCIP Energy Resource and Infrastructure Plans would result in substantial changes to the visual character of the Plan Area. Whether these changes would substantially degrade the existing visual character or quality of the site and its surroundings depends on the individual circumstances of each VCIP project, with the level of impact ranging from no impact to significant. With respect to VCIP implementation adjacent to urbanized areas, the VCIP would not conflict with applicable zoning regulations governing scenic quality. (*Plan Level – Significant Impact; Project Level Impact – To be determined for each project*)

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Visual Characteristics of Project Elements

The VCIP Energy Resource Plan provides the planning framework for the development of utility-scale solar facilities and energy storage facilities. The solar facilities would consist mainly of solar arrays, along with supporting infrastructure, substations, O&M facilities, battery storage facilities, power collection and transmission lines, internal access driveways, and security fencing. The solar arrays would constitute the dominant visual element of potential solar facilities. However, the arrays would be low in profile, rising to a height of up to 8 feet, and the panels would be dark and non-reflective. The ground between and beneath the solar panels would be revegetated which would provide a naturalized context to visually soften the structural elements and maintain a visual connection with the rural setting. The largest structures would consist of substations with some elements up to 140 feet tall.

The VCIP Infrastructure Plan includes supporting elements such as gen-tie lines, collection substations, and connecting transmission lines. The gen-tie and transmission lines would be similar, as they both involve overhead electrical cables strung between tubular steel monopoles to transmit the generated power to and from collection substations and the state electrical grid. Gen-tie towers would be up to 140 feet tall and transmission towers would be as high as 180 feet. The Infrastructure Plan includes approximately 260 miles of gen-tie line and 79 miles of connecting transmission corridor. The five collection substations dispersed throughout the Plan Area would each occupy approximately 60 acres and have structural components as tall as 140 feet. The connecting transmission lines and collection substations would be generally located along the north and east sides of the Plan Area where they would serve the higher concentration of solar and energy storage projects that are planned for those areas.

The overall visual appearance of a typical utility-scale solar and energy storage project, as viewed from public roadways passing through and alongside the solar facility, would vary with distance. 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, solar arrays in the foreground would tend to visually screen solar arrays in the background, thus reducing the overall visual mass and scale (see Figure 4.1-1). Within the solar fields, the larger structural elements such as inverters/transformers and maintenance buildings would be visible in the distance. The largest elements such as energy storage systems and project substations would be visible at varying distances from the traveled roadways (see Figure 4.1-2). The overall visual effect to passersby would be of a low-profile facility of uniform height (up to 8 feet in the early and late daylight hours, and lower during most of the day) with the slightly taller structures such as inverters/transformers appearing intermittently throughout, and the higher structures such as substations and transmission towers appearing much less frequently in the middle ground. Given that the travel surfaces of the public roads are typically raised several feet above the adjacent lands, this would further reduce the visual profile of the solar facilities. As shown in Figure 4.1-1, the solar arrays would not block distant views of lands beyond, and would be lower in height than the tree crops that are prevalent in the Plan Area.

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Photo 1: Typical Solar PV Field



Photo 2: Solar Field with Adjacent Orchard



Photo 9: Solar Array with Adjacent Residence

Photos of Typical Solar Projects
Figure 4.1-1



Photo 4: 230-kV Gen-Tie Monopole Line with Residences Opposite



Photo 5: 500-kV Transmission Monopole Line



Photo 6: Typical 230-kV Project Substation with O&M Building

Photos of Typical Solar Projects Figure 4.1-2

General Visual Effects of VCIP Implementation

As discussed in Section 4.1.1. *Environmental Setting*, the aesthetic value of an area is defined by its visual character and quality combined with viewer sensitivity to the visual environment. Apart from its vast flatness, the Plan Area is generally lacking in distinctive features and does not have a strong visual connection to recognized scenic resources such as the foothills in the distance to the west. The landscape has been highly modified for large scale agricultural and renewable energy uses and retains little if any of its original natural attributes. Under current conditions, the general visual quality of the Plan Area is low to moderate.

The VCIP Concept Plan provides for development of up to 136,000 acres of land for solar and energy storage projects within a number of DFAs. The pattern of DFAs varies widely depending on location within the Plan Area, with a higher concentration of DFAs in the northern and eastern portions of the Plan Area, a more dispersed pattern in the western areas, and no DFAs in the area south of SR-198. The connecting transmission line and collection substations would also generally be located along the north and east sides of the Plan Area where they would be within the higher concentration of solar and energy storage projects in those areas. Although VCIP projects would largely consist of low-profile solar arrays, which are not visually dominant, the character of large portions of the Plan Area would change on a long-term temporary basis from being predominantly fallowed land to rural land where solar facilities are visually dominant. Thus, prior to decommissioning, implementation of VCIP projects would bring a substantial visual change to the Plan Area overall.

Construction activity would sometimes occur in proximity to roadways and residences. However, solar and transmission facilities are constructed at a rapid pace, and 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 Plan Area would take several years, the visual effects associated with construction activity at any given location would be temporary and relatively brief in duration. For example, a typical 250 MW solar project on a 1,600-acre site would be completed in about one year. During different construction phases, such as grading, trenching, and panel installation, activity would occur sequentially and would take a week or two for each activity at any given location. The longest duration of activity would occur at the main construction staging site, which would typically occupy 30 acres near the main project entrance, and would serve as the hub of activity during the entire construction period. This area would also provide the location of the facility substation, battery storage system, and O&M facility. These facilities would be located away at least 400 feet from existing residences to minimize noise impacts to sensitive receptors during project operation (see Section 4.13. *Noise, Mitigation Measure NOI-1b*). Thus, the staging area for each solar project would also be located away from existing residences.

Viewers and Viewer Sensitivity

As discussed in Section 4.1.1. *Environmental Setting*, the Plan Area includes several types of viewer groups, including residents, motorists, commercial employees, and recreational users. Each of these groups has different degrees of sensitivity to changes in their visual setting, with residential and recreational viewers having high sensitivity to visual change, and motorists and commercial employees having low to moderate sensitivity to visual change. In the following discussion, the degree of visual change experienced by each group because of VCIP implementation is evaluated in terms of their visual sensitivity to determine the extent of visual impacts for each group.

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Residents

Residential viewer groups typically have high sensitivity to visual changes, since they have stationary and long duration views of the landscape subject to the changes. To determine potential visual impacts on this group, the locations of existing residences were evaluated regarding the extent to which their visual settings would change due to implementation of potential VCIP solar, energy storage, and infrastructure facilities planned in their vicinity. Of the 772 total identified existing dwellings in the unincorporated areas of the Plan Area, approximately 110 dwellings would have solar facilities located in the foreground views from at least one side of their properties, of which 62 residential properties contain intervening landscaping which would screen all or most of the view toward the solar facilities. Of the total 772 dwellings, 55 residences would view solar facilities located directly across a public roadway, of which 10 dwellings would also have solar arrays on the one other side or rear of their properties. An additional 44 dwellings would have solar facilities on one side or rear only, and four dwellings would have solar facilities on two sides or rear. No dwellings would face solar facilities from three or four sides of their properties. The vast majority of dwellings (i.e., 559 residences) in the Plan Area would have no solar or infrastructure facilities in their foreground views.

Most of the potentially affected dwellings are located in the rural community of Cantua Creek, where up to 20 existing dwellings would back directly onto planned solar project sites; 23 dwellings would face solar facilities across a public roadway; and seven residences would have rear views of nearby solar facilities across an existing stormwater basin. In Three Rocks/El Porvenir, two dwellings would have direct front views across SR-33 to a solar project site. The communities of Five Points and Westside/O'Neill would have no solar, energy storage, or infrastructure facilities constructed in their vicinities under the VCIP.

As noted, the City of Huron is surrounded by the Plan Area; however, the nearest DFA is located five miles north, the nearest collection substation is located six miles north, and no gen-tie lines are anticipated to be routed within these distances from the city limits. As such, no VCIP facilities would be visible from any location within the City of Huron.

The City of Mendota is located adjacent to the northeast corner of the Plan Area. The nearest DFA is located one mile west of the city limits, and the connecting transmission line would run in a north-south direction approximately 0.7 miles west of the city limits. The nearest collection substation would be located approximately 5.5 miles south, and no gen-tie lines are anticipated to be routed within one mile of the city limits. At these distances, the nearest VCIP facilities may be barely visible from the nearest vantage points in the City of Mendota.

Potential VCIP projects would comply with all applicable zoning and other regulations governing scenic quality. The Fresno County Zoning Ordinance requires all structures (except fences) to be setback 35 feet from a public road right-of-way², which would provide a total of about 135 feet of separation from the front of a typical dwelling and the nearest solar arrays across the roadway (assuming a 60-foot road ROW, and a typical 40-foot setback to the dwelling façade)(Fresno County 2024a). On the other three sides, the required setback from the residential property line to the nearest solar arrays would be 20 feet which would accommodate the

² Fresno County's Solar Facility Guidelines (Fresno County 2017) requires solar projects "to create a buffer between the proposed solar facility and adjacent agricultural operations" (Guideline No. 5). In its approval of recent solar and energy storage projects (e.g., Luna Valley, Key Energy Storage, Sonrisa), the County has interpreted this guideline to mean a minimum 50-foot buffer from the edges of a project's boundaries to the closest structural improvements or equipment, excluding fencing (Fresno County 2021a, 2023d, 2024f). In addition, the County's Guidelines for Solar Reclamation Plans state: "Applicants must work to achieve a minimum 50-foot buffer from the edges of property boundaries to the closest structural improvements or equipment (excluding fencing)(Fresno County 2025c). {00081327.1}"

internal perimeter driveway within the outside fence line of the solar facility. The solar facilities typically would not include landscape planting within the setback zones adjacent to the affected residences, as the applicable regulations would not require such landscaping. However, many of the affected residential properties include trees and other landscaping within and around the dwellings which would provide some visual screening from the solar facilities. Yet, for most of the potentially affected dwellings, the introduction of solar facilities in their immediate vicinities would represent a substantial change to the character and quality of their visual settings.

With respect to VCIP infrastructure, there are no existing dwellings within one-half mile of the planned connecting transmission corridor or any planned collection substation, with the exception of the UC West Side Research and Extension Center (WSREC) near Calflax where three existing dwellings would be located approximately 600 feet from the transmission line. The tall steel poles associated with these facilities would be barely visible from residences a half mile away. At the WSREC, the view of the transmission line would be blocked by the dense stand of intervening trees and landscaping along the Center's frontage on W. Oakland Avenue. The routes of the gen-tie lines have not been determined, but it is expected that those lines would be similarly routed to avoid and provide some distance from existing residences. Therefore, the VCIP infrastructure elements would not represent a substantial change to the character and quality of the visual settings of dwellings within the Plan Area.

Motorists

This viewer group includes people traveling on public roadways in the Plan Area. These roadways include the heavily traveled I-5 along the west side of the Plan Area, and the lightly traveled State Routes and County Roads which provide local transportation access to agricultural, commercial, and residential uses within the Plan Area. Motorists on I-5 generally consist of regional travelers who occasionally pass through the area. Motorists on local roadways generally are those who travel the area frequently and are familiar with the visual setting. Roadway views may be long or short in duration, and in some locations, motorists' views are screened by roadside vegetation such as orchards and occasional stands of mature trees and landscaping. The sensitivity of this viewer group is generally considered to be low to moderate.

As discussed under Impact AES-2 above, motorists on I-5 would likely notice the addition of six new solar facilities of varying sizes dispersed alongside the freeway over a distance of about 56 miles, as well as the one new transmission line crossing over the freeway. It is anticipated that the largest continuous solar project would run along the east side of the freeway for 3.6 miles, with other projects ranging in length from 0.1 to 1.2 miles along the freeway, for a total combined distance of about eight miles. The views of most of the solar facilities and the transmission line crossing would be brief with the longest duration view of solar arrays lasting about three minutes at freeway speeds on the eastside of the freeway (as provided above, the solar facilities would be visible on the westside of the freeway for a total of approximately two minutes). The visual prominence of the solar arrays along the roadside would be reduced by the 200-foot setback requirement from scenic highways as set forth in Fresno County General Policy OS-L.3, as applicable. While traffic volumes on I-5 are high, the typical travel experience through the San Joaquin Valley is long and monotonous with low visual quality. Given the brief duration of views that would change along the freeway, as visually reduced by setbacks from the freeway and the generally low visual sensitivity of motorists traveling I-5, the introduction of VCIP solar and transmission projects to the I-5 setting would not represent a substantial change to the character and quality of the existing visual setting of the I-5 freeway in the Plan Area.

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Motorists on State Routes and County Roads within the Plan Area would notice visual changes due to the development of VCIP energy and infrastructure projects. The most affected State Routes would be SR-33 and SR-269, and the most affected county roads would be N. Fairfax, N. San Diego, N. San Mateo, W. Manning, W. Mountain View, W. Clarkson, W. Mount Whitney, and S. Sonoma Avenues. These roadways are lightly traveled, mainly by local residents and workers who are accustomed to visual conditions along these routes. In some areas, the VCIP solar and energy storage facilities would form a continuous or near continuous scene of low-profile solar arrays and supporting structures for several miles along the roadside, in some cases along both sides of the roadway. These are also the areas that would be traversed by the connecting transmission corridor which would cross existing roadways or run alongside them for short distances at 12 locations. Upon completion, the connecting transmission corridor would include two parallel 500-kV transmission lines within a 450-foot right-of-way. The distances between the five connecting substations and the nearest public roadways would range from 0.1 to 0.5 miles. The visibility of the taller structural elements of the substations would vary by distance and would introduce prominent new structural features from the nearest viewpoints. The overall visual effect of solar, transmission, and substation development in these areas would be substantial.

In other portions of the Plan Area, such as the northwest, west and southern areas, the intensity of VCIP implementation would be much lower, with solar and energy storage facilities appearing intermittently in roadside views. Only one transmission tower line would pass through the western area, extending to the planned Manning Substation with two roadway crossings and a short run alongside an existing road. No VCIP collection substations would be located in these areas. The potential VCIP solar facilities in these areas would be intermittent. Because the rural agricultural landscapes would still predominate, the overall visual effect would likely be less than substantial in these portions of the Plan Area where VCIP implementation would occur at a lower intensity.

Overall, the VCIP energy and infrastructure facilities would represent a substantial change to the character and quality of the visual setting to motorists using the local highways and roads in the Plan Area. However, this effect would vary depending on the location of the roadway and the amount of VCIP development that would occur along it. In some areas, such as north, northeast, and east-central portions of the Plan Area, the effect on the motorist view group would be substantial, while in the northwest, west, and southern areas, the effect on the motorist viewer group would likely not be substantial. From a Plan-wide perspective, the motorists traveling along the local highways and roads in the Plan Area would experience a substantial change to the character and quality of their visual setting.

Commercial Employees

This viewer group includes agricultural workers, employees at agricultural processing facilities, retail workers at highway commercial centers, and others. While engaged in their occupations (not commuting) these viewers may be in proximity to potential VCIP energy or infrastructure projects. The sensitivity of this viewer group is considered to be low to moderate.

Apart from agricultural jobs, there are few employment opportunities in the Plan Area, and these tend to be concentrated at the rural communities, highway commercial centers on the freeway, and nearby cities. In general, VCIP energy and infrastructure projects would not occur in proximity to these employment centers, with the exception of agricultural workers on lands adjacent to the VCIP facilities. Overall, it is expected that relatively few commercial employees would have direct visual access to VCIP facilities while on the job. Therefore, the VCIP energy and infrastructure facilities would not represent a substantial change to the character and quality of the visual setting to commercial employees.

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Recreational Users

This viewer group includes those who utilize recreational opportunities in the area. The recreational destinations in and near the Plan Area include the Mendota Wildlife Area and the Pilibos Wildlife Area. These areas offer low intensity recreational activities such as hunting, wildlife viewing, and hiking. The sensitivity of this viewer group is considered high, although the number of recreationalists visiting these wildlife areas is relatively low compared to other viewer groups.

Recreational users at the Mendota Wildlife Area would view the potential VCIP solar facilities adjacent to the northwest and southwest corners of the wildlife area. The nearest connecting transmission line segment would be one mile south, and the nearest collection substation (No. 2) would be two miles west. The main entrance and visitor center at the wildlife area are at least one-half mile from the nearest potential VCIP solar project. This project would be visible from limited areas on the western boundary of the wildlife area. The Mendota Wildlife Area comprises almost 12,000 acres, most of which does not have visual access to the VCIP development areas or infrastructure. While the recreational viewer group has high visual sensitivity, the VCIP energy and infrastructure facilities would not represent a substantial change to the character and quality of the visual setting for recreational users of the Mendota Wildlife Area.

The Pilibos Wildlife Area is used for dove hunting and bird watching by appointment only. The nearest potential VCIP solar project would be adjacent to the wildlife area on the east. No VCIP infrastructure is planned in the vicinity. The eastern edge of the wildlife area has a continuous strip of natural vegetation which would provide some screening from the adjacent VCIP solar facility. While the recreational viewer group has high visual sensitivity, the adjacent low solar arrays would be screened by the intervening landscaping and would be set back from the wildlife area boundary. Therefore, implementation of the VCIP energy facilities would not represent a substantial change to the character and quality of the visual setting for recreational users of the Pilibos Wildlife Area.

Summary

Overall, the scale of development contemplated under the VCIP energy and infrastructure plans would represent a substantial change to the character and quality of the visual setting of the Plan Area and its surroundings. However, the concentration and distribution of VCIP facilities would vary greatly by location within the Plan Area. Therefore, whether a particular VCIP energy or infrastructure project would substantially degrade the character or quality of the site and surroundings would depend on its location within the Plan Area. Several residential viewers in areas of the Plan Area where the most extensive development would occur would experience substantial changes in the visual character and quality of their settings. However, the majority of residential viewers in the Plan Area would experience limited or no visual changes due to implementation of potential VCIP projects and would not experience substantial changes in the visual character and quality of their settings. Similarly, some motorists, such as those on I-5 or in areas where less development is anticipated, would not experience a substantial visual change, while motorists traveling along local roadways like SR-33 where near-continuous development could occur would be subject to substantial visual changes. Commercial employees and recreational users would not be subject to substantial visual changes due to their limited public views of potential VCIP project sites.

In certain portions of the Plan Area where the most extensive contiguous solar and energy storage development is planned, implementation of the VCIP Energy Resource and Infrastructure Plans would substantially degrade the {00081327.1}

existing visual character and quality of the Plan Area and its surroundings, and the impact would therefore be significant. However, in substantial portions of the Plan Area, implementation of the VCIP Energy Resource and Infrastructure Plans would *not* substantially degrade the existing visual character and quality of the Plan Area and its surroundings. Where necessary, site-specific impact conclusions regarding implementation of individual VCIP projects would be made during subsequent CEQA review of those projects.

Mitigation Measure AES-1: Visual Mitigation

To avoid or substantially reduce potential visual impacts from VCIP implementation, the following mitigation measures are identified for implementation at the project stage, as applicable:

- 1) For VCIP solar and energy storage projects located adjacent to public roadways: On the solar/energy storage project site, provide a 50-foot setback from the road right-of-way to the nearest project structure, not including fencing or internal driveways;
- 2) For residences with planned solar/energy storage projects contiguous to any residential property line: On the solar/energy storage project site, provide a 50-foot setback from the contiguous residential property line(s) to the nearest project structure, not including fencing or internal driveways;
- 3) At each VCIP energy resource and infrastructure project site, the following project elements shall be located as far as practicable from the nearest residence, and shall be located no nearer than 400 feet from the nearest residential property boundary: O&M yard and buildings; project substations; battery energy storage facilities, and construction staging and laydown areas.

Significance After Mitigation: Significant Unavoidable Impact.

Application of the above mitigation measure to the design and construction of VCIP projects would reduce the overall potential aesthetic impacts of VCIP implementation, but not to a less-than-significant level. Given the overall scale of VCIP energy and infrastructure development, the aesthetic impact of VCIP implementation as a whole would be significant and unavoidable after mitigation. The aesthetic impact of any given VCIP project may be found to be less than significant, however, depending on that individual project's circumstances. For example, in the environmental impact reports (EIRs) prepared for five large utility-scale solar and energy storage projects (ranging in size from 1,250 to 4,000 acres) in Fresno County since 2020, each EIR concluded that the aesthetic impacts associated with those projects would be less than significant without mitigation (Fresno County 2020, 2021a, 2021b, 2023d, 2024f). The significance of aesthetic impacts associated with individual projects under VCIP would be determined at the site-specific level of CEQA review, as applicable, for each project.

Impact AES-4. Light and Glare

The VCIP energy and infrastructure projects would introduce new sources of light and low-level glare to the Plan Area; however, the VCIP facilities would be specifically designed and constructed to minimize light and glare and would not adversely affect day or nighttime views in the area. (*Less-than-Significant Impact*)

Lighting

Existing nighttime conditions throughout the majority of the Plan Area are essentially dark with isolated light sources associated with its small communities, ranch complexes, agricultural processing plants, a federal prison, solar generating facilities, and substations, among other facilities and features. The I-5 corridor is also a source of night lighting from the streams of headlights on the highway and bright lighting at commercial centers at the interchanges.

The potential VCIP solar and energy storage facilities would introduce new sources of light to the area, although permanent exterior lighting would be mainly located at the site entrances, the operations yards, and the substation/switching stations. As described in Section 2. *Project Description*, subsection 2.5.1.1.1. *Typical Solar Project Components*, within the solar fields and energy storage facilities, lighting would be confined to the inverter/transformer pads, which would be activated only when needed by switch or motion sensors. There would be no permanent lighting within the solar fields, along any internal access driveways, or around the perimeters of the facilities. All lighting would be low in intensity, 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 (Fresno County Zoning Ordinance, section 820.3.080). Mobile lighting, if needed for occasional nighttime equipment repair and replacement, would be directed away from external boundaries.

During the construction phase for each solar and energy storage facility, the construction staging areas would have security lighting, but staging areas would be located at least 400 feet away from any existing residences, as provided in Mitigation Measure AES-1 (MM AES-1) above (under Impact AES-3). Temporary night lighting for construction of these solar/BESS projects would be needed on rare occasions when construction activity extends into the evening hours, but construction activity would always cease by 9:00 PM, as required by Fresno County's Noise Ordinance (see Sections 4.13. *Noise*, under "Regulatory Context," 4.16 *Transportation* under "Road Segment Analysis" "[f]ew if any workers would arrive after 7:00 AM, and relatively few would depart after 5:00 PM], and 2.0 *Project Description* under "Workforce"). As with mobile lighting during facility operations, the temporary lighting would provide the minimum illumination needed and would be directed away from facility boundaries. Additionally, for safety reasons, a limited number of specialized construction tasks, such as final electrical terminations, must be performed after dark when no energy is being produced. However, these activities would involve much fewer workers than the typical construction activities, and lighting would provide the minimum illumination and would be directed away from facility boundaries. Therefore, these limited nighttime activities would not create a new source of substantial light that would adversely affect nighttime views in the area. Finally, as the vast majority of routinely scheduled construction activity would take place during daylight hours, lighting from workers' headlights while commuting to and from the project sites would occur infrequently.

Construction of the proposed gen-ties, transmission facilities, and collector substations would occur during daylight hours. However, in the event nighttime 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, although it is expected that these staging areas would be located away from existing residences. It is noted that the anticipated connecting transmission corridor would be routed to be at least 0.5 miles from existing residences (the only exception is the WSREC at Calflax, where three residences are 600 feet south of the transmission corridor, although these homes have dense landscaping along their north frontages which would shield most incoming light). The temporary staging areas for transmission construction would be located within or adjacent to the transmission right-of-way, as a practical matter, so it is unlikely the staging areas would be {00081327.1}

located near any residences; however, the 400-foot setback distance identified in MM AES-1 would ensure that a separation distance is provided. Any such lighting would be directed inward toward the work areas and direct lighting beyond the work areas would be avoided. Thus, although the residences would perceive the temporary light sources in the vicinity, they would not be subject to the direct glare of lighting which would be positioned and oriented to avoid direct visibility of the light source from adjacent and nearby properties. In the unlikely event that nighttime work on transmission lines would be needed, night lighting at any transmission 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 transmission route. Once completed, the transmission lines would not include lighting, so no new sources of light would occur. The collection substations would require low-intensity security lighting, but none of the five potential substations is planned within one-half mile of an existing dwelling.

Potentially sensitive receptors to unwanted illumination primarily include the existing residences in the area. Most ranches and residential properties include trees around the dwellings and often have frontage landscaping along the roadway to provide visual screening. However, with implementation of the setback requirements set forth in MM AES-1 above, it is not anticipated that project elements with permanent lighting, such as operations yards or substations, or temporary facilities such as construction staging areas, would be located in proximity to existing ranches, dwellings, or rural communities. While the general increase in indirect low-intensity night lighting would be noticeable at existing residences, the new sources of light would not be substantial and would not adversely affect nighttime views from existing residences in the Plan Area. The recreational and commercial worker viewer groups would generally not be present in the Plan Area at night, so the effect of increased night lighting on these groups would not be substantial and impact would be less than significant.

Motorists along the roadways traversing the Plan Area would notice the increased light sources associated with VCIP solar and energy storage development. The main source of existing night lighting for motorists is from headlights of oncoming vehicles. Proposed project operations would involve few permanent staff (e.g., a typical 250 MW solar/BESS facility would have up to 10 permanent operations staff, and daily average of five part-time staff), so the increase in nighttime traffic from VCIP projects would be insubstantial. Within the Plan Area, a few areas within each facility would be illuminated with low intensity lighting. Since the solar fields would not be illuminated, much of the Plan Area would remain in darkness. While the general increase in night lighting would be noticeable, the effect on motorists would not be substantial and would not adversely affect nighttime views in the Plan Area.

Implementation of VCIP projects would introduce new sources of permanent and temporary nighttime lighting to the Plan Area, but the light sources would be low intensity, downward directed and isolated. Since the solar fields and transmission lines would not be illuminated, the vast majority of the Plan Area would remain in darkness. The residents in the vicinity of the solar facilities and motorists on the area roadways would notice an increase in night lighting but the overall dark rural quality of the Plan Area would be largely maintained. Therefore, the lighting impacts resulting from VCIP implementation would be *less than significant*.

Glare

Glare is an intense light effect resulting primarily from sunlight reflecting off surfaces when the angle of the sun to the surface directs sunlight 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.

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All solar panels installed within the Plan Area would be composed of photovoltaic (PV) cells. Solar PV employs glass panels that are designed to maximize absorption and minimize reflection 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, reflectivity can be reduced to less than four percent (4%) of incoming sunlight (EE Times 2012). Modern PV panels reflect as little as two percent of incoming sunlight, about the same as water and less than soil or even wood shingles (NREL 2018). Potential VCIP projects would use only these anti-reflective PV panels. 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 solar radiation on a receiving tube or tower, reflect about 90 percent of the incoming sunlight (FAA 2018).

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 potential for sunlight to be reflected obliquely from the east-west oriented panels at a similarly low angle to observers at ground level. However, given the anti-reflectance design of all solar modules, as discussed above, any reflected light would not produce glare at ground-level receivers. The potential for ground-level reflection is further reduced by tracking systems, which are currently utilized in most solar facilities and are expected to be used in most if not all VCIP solar projects since they can increase the solar energy production on a site by 15 to 25 percent over fixed tilt systems (SPW 2018). Solar arrays mounted on trackers are installed in a north-south orientation, which allows the 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 receivers. 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 receivers. (See Figures 2.5-1 and 4.1-2 for photos of typical solar arrays, and Figure 2.5-4 for photo of a typical battery storage system.)

Regarding the VCIP Infrastructure Plan, the towers, conductors, insulators, and other electrical equipment at the gen-tie lines, connecting transmission lines, and collection substations could include potentially reflective surfaces that could cause glare. However, the materials typically utilized for these types of infrastructure projects are non-reflective and non-refractive, or would be treated with non-reflective coatings. For example, monopoles and other structural elements used for gen-tie and transmission lines are galvanized in a “hot dip” process which produces a dull finish without a reflective sheen (see Figure 4.1-2 for photos of typical transmission towers, and Figures 2.5-3 and 2.5-6 for photos of typical substations.) Therefore, the potential for increased glare from VCIP infrastructure facilities would not be substantial.

The VCIP solar, energy storage, and infrastructure facilities would utilize structural elements which minimize glare, and the low intensity reflected light produced by these facilities would not have a significant adverse effect on views from potential ground level receivers or motorists in the area. (See Section 4.9. *Hazards and Hazardous*

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Materials for discussion of potential glare hazard to aviation.) Therefore, the potential glare impacts resulting from VCIP facilities would be *less than significant*.

Summary

Implementation of the VCIP energy and infrastructure projects would introduce new sources of potential light and glare to the Plan Area; however, the VCIP facilities would utilize structural elements which minimize light and glare, and would not adversely affect day or nighttime views in the area, and the impact would be *less than significant*.

Mitigation Measures: No mitigation is required.

4.1.3.2. TRANSMISSION CORRIDORS OUTSIDE THE VCIP

The transmission corridors for delivery of solar generation from potential VCIP projects to urban electricity markets in northern and southern California have been identified at a conceptual level in this PEIR to allow a general discussion of environmental impacts associated with transmission line development for informational purposes. These transmission delivery corridors extend far beyond the District's boundaries and are not part of the proposed VCIP. Planning and approval of these outside transmission lines are under the jurisdiction of the state and federal energy regulatory agencies, public utilities, and cities and counties traversed by the transmission corridors. The following discussion provides an overview of potential impacts of the outside transmission lines with respect to aesthetics.

Effects on Scenic Vistas

The outside transmission corridors would traverse the flat farmlands of the San Joaquin Valley, the desert landscape of the Antelope Valley, and the rugged terrain of the Coast Ranges, the Tehachapis, and the foothills of the San Gabriel Mountains. In several areas, the transmission lines would be visible in scenic vistas as viewed from public roadways, private residences, and recreational areas. However, the transmission lines would largely consist of narrow-profile steel monopoles which would comprise small elements in the context of broad scenic vistas. In all corridors, the new transmission lines would parallel existing transmission lines, which consist almost entirely of more visually dominant steel lattice towers. Addition of a new line of parallel monopoles would be noticeable but would not introduce a new visually dominant element to any existing view. Therefore, the outside transmission corridors would not be expected to have a substantial adverse effect on a scenic vista.

Effects on Scenic Resources

The delivery transmission lines extending outside the Plan Area to regional load centers would have a total corridor length of approximately 348 miles and would pass through ten counties (see Figure 2.4-1). There are several scenic resources along the outside transmission corridors, some of which are recognized in county planning documents. Along the northern transmission corridor, these scenic resources generally include the foothills of the Coast Ranges in Fresno, Merced, Stanislaus, and San Joaquin counties, which includes the State Recreation Areas at the San Luis and Los Banos Reservoirs. Along the western corridor, scenic resources include the mountains and interior valleys in the Coast Ranges, and the nearby wildlife refuges at Elkhorn Slough and

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Moss Landing at Monterey Bay. The southern transmission corridor passes through the remote mountain landscapes of the Tehachapis in Kern County and the Mojave Desert landscapes of northern Los Angeles County, including the nearby Antelope Valley California Poppy Preserve and the foothills of the San Gabriel Mountains. All transmission routes would avoid the listed refuges and preserves by at least one mile, and would encroach slightly on the State Recreation Areas at the San Luis and Los Banos Reservoirs. The outside transmission lines would not have a direct physical impact on any known scenic trees, outcroppings, or historic buildings, although there is potential for the new transmission lines to run within sight of such features.

The outside transmission corridors would cross or run parallel to several state- and county-designated scenic highways. Along the northern transmission corridor, I-5 is a designated state scenic highway north of SR-152. The I-5 segments in Fresno and Merced counties are designated as county scenic highways, but the Stanislaus County segment is not. In Merced County, SR-152 west of I-5 is a state- and county-designated scenic highway. The segment of I-580 in San Joaquin County is a state and county-designated scenic highway. In the western corridor, the transmission route crosses I-5, a Fresno County scenic highway; SR-25, a San Benito County scenic highway; and SR-156, a State scenic highway, as well as two proposed scenic routes in Monterey County. The southern corridor crosses several Priority Scenic Drives in Los Angeles County as designated in the Antelope Valley Area Plan. The outside transmission corridors cross no designated or eligible scenic highways in Kern, Kings, Stanislaus, or Alameda Counties.

The outside transmission lines would mainly consist of steel monopoles, with a narrow profile and low visibility at a distance. In the mountain segments, the towers may consist of steel lattice structures for greater stability on the thin soil cover. In either case, the towers would run parallel to existing tower lines, so the new transmission lines would not introduce new structural elements to a pristine scenic resource. Throughout the entire 348-mile length of the outside transmission corridors, the lines would cross scenic highways at no more than five locations. Along I-5, the northern transmission line would run to the west of the existing multiple tower lines that parallel the freeway and would run behind the first ridge and beyond sight of motorists on I-5 for much of that route.

The outside transmission lines would cross over or run within sight of scenic resources within their settings, but would not result in substantial damage to scenic resources.

Substantially Degrade Visual Character and Quality

The transmission lines in all three outside corridors would run parallel and adjacent to existing transmission lines, which are integral elements of their visual settings under existing conditions. Thus, the new transmission lines would represent incremental visual changes to the overall settings, which already include similar prominent linear elements. The new transmission lines and towers would require minimal new access roads since they would be readily accessible via existing farm roads in the valley areas, and would utilize existing tower access roads in the mountainous areas. Construction at each tower site would introduce equipment, materials and activity to the settings but the duration of construction at any given location would be brief. To the affected residential, motorist, commercial employee, and recreational viewer groups, the visual changes resulting from the new transmission lines would be noticeable but would not constitute a substantial change in the character of the settings. Therefore, the outside transmission lines would not substantially degrade the existing visual character or quality of the transmission corridors and their surroundings.

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Light and Glare

The outside transmission lines would not introduce new sources of light to their settings. During construction, mobile night lighting may be employed if work extends beyond daylight hours, but once completed the transmission lines would include no permanent sources of night lighting. The transmission towers and conductor cables would be treated with non-reflective surfaces or treatments to avoid glare. Thus, the transmission lines would not introduce new sources of daytime glare. The outside transmission lines would not create new sources of substantial light or glare that would adversely affect day or nighttime views in the area.

4.1.3.3. CUMULATIVE IMPACTS

The methodology for conducting the cumulative impact analysis is described in Section 4.0.5. *Cumulative Impacts*. As discussed in that Section, the analysis considers whether the impacts of two or more past, present, or reasonably foreseeable future projects, including the proposed VCIP, would combine to result in a cumulatively significant impact. Two or more projects would have the potential to result in cumulative visual impacts if they are located in the same field of view of a given observer.

The extent of an aesthetic impact tends to be limited to the viewshed of a given project, which consists of the surrounding lands from which the project would be visible to observers. Given the essentially flat terrain of the Plan Area, prominent objects introduced under the VCIP (e.g., substation components up to 140 feet tall) would be visible by observers with an unobstructed view from as far as two to three miles. However, the object's visual prominence would be substantially reduced beyond one mile. Accordingly, for purposes of analysis in this PEIR, the geographic scope of the cumulative analysis of aesthetic impacts is considered to extend approximately three miles from any given project site.

VCIP Energy Resource and Infrastructure Plans

Effects on Scenic Vistas

As discussed under Impact AES-1, the Plan Area consists of essentially flat agricultural land typical of the west side of the San Joaquin Valley, with no topographic variation or features to provide visual interest or vantage points for panoramic views or scenic vistas. Although the foothills to the west are a recognized scenic resource, they form the distant background from viewpoints in the Plan Area and are not visually dominant elements in the landscape. There are no views from the valley floor which would be considered scenic vistas. Similarly, there are no publicly accessible views available from the western foothills over the Plan Area that would be considered scenic vistas.

Most of the cumulative projects are very similar visually to the potential energy and infrastructure projects proposed under the VCIP. In general, the structural elements of the cumulative projects would consist mainly of low-profile solar arrays, small and medium scale substations, and narrow profile gen-tie towers. These projects would not block views of the hills and mountains, nor would they constitute a substantial change in the few low quality, long-distance views available from the western foothills. Therefore, the combined effects of the VCIP energy and infrastructure projects and the other cumulative projects would not result in a

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cumulatively substantial adverse effect on a scenic vista; the VCIP's incremental contribution would not be cumulatively considerable, and the cumulative impact would be *less than significant*.

Effects on Scenic Resources

As discussed in Section 4.1.1. *Environmental Setting*, there are no historic buildings, rock outcroppings, or notable trees or other scenic resources within or near the VCIP Plan Area. The only scenic highways in the vicinity of the Plan Area are a segment of SR-198 extending west from I-5 to the Monterey County line, and the entire length of I-5 within Fresno County. As mentioned, the foothills of the Coast Ranges to the west of I-5 are a recognized scenic resource. There are no other recognized scenic resources within the cumulative study area.

As discussed under Impact AES-2, several DFAs are located alongside I-5, but these are dispersed along the 56-mile length of this freeway segment and setbacks from the freeway right-of-way would reduce visual effects to motorists, a viewer group which has low to moderate visual sensitivity. Therefore, implementation of the potential VCIP projects would not result in damage to scenic resources.

Two cumulative projects are planned in the vicinity of the I-5 and SR-198 scenic highways. The first project consists of additional commercial development at the existing highway commercial center at the I-5/SR-198 interchange. This project would represent an incremental expansion of an already substantial commercial center and would not result in damage to the scenic resources of these highways. The nearest DFA is two miles northeast of the interchange and would not have an adverse effect on the scenic highways. Therefore, the combined effect of the additional commercial development and VCIP projects within the nearest DFA would not result in cumulative damage to these scenic highways.

The second cumulative project is the planned Manning Substation located one mile west of I-5 south of W. Manning Avenue, a distance at which the substation would not adversely affect the scenic quality of the freeway. The VCIP connecting transmission line to the Manning Substation would cross over I-5 but would be visible fleetingly by passing motorists and would not have a substantial visual effect. A relatively small (40-acre) DFA is located over one-half mile from both the planned Manning Substation and I-5. At these distances, a small VCIP solar and energy storage project on the 40-acre site would not combine with the Manning Substation to result in cumulative damage to this scenic highway.

Implementation of the VCIP energy and infrastructure projects would not combine with other cumulative projects to result in damage to a scenic resource; the incremental contribution of VCIP projects would not be cumulatively considerable, and the cumulative impact would be *less than significant*.

Substantially Degrade Visual Character and Quality

The past, present and reasonably foreseeable future projects within ten miles of the Plan Area's external boundaries are listed in Table 4.0-2 and shown in Figure 4.0-1.³ Among these cumulative projects are several solar facilities within three miles of DFAs within the Plan Area. The largest of these include: the completed Tranquillity, Scarlet, Little Bear, North Star, and Adams East solar projects; the approved but not yet constructed Luna Valley solar project and Key Energy Storage project. Other cumulative projects that share a viewshed with

³ Table 4.0-2 and Figure 4.0-1 include a total of 72 cumulative projects; however, four of these projects comprise solar/BESS projects within the VCIP DFAs. Since the plan level impacts of the DFAs, including these projects, are addressed in the main impact analysis sections of this PEIR, they are not addressed again in the cumulative analyses. {00081327.1}

potential VCIP projects include the proposed Manning Substation, the planned highway commercial developments at the I-5/SR-198 interchange and at the junction of SR-198/SR-269, and the planned Kamm Avenue and Stamoules pistachio plants.

Under existing conditions, the largest concentration of operating solar facilities is along SR-33 between W. South and W. Nebraska Avenues, where the Tranquillity, Scarlet, and Adams East solar facilities comprise a near-continuous field of solar arrays on both sides of the highway for 3.5 miles. However, due to the width of the highway right-of-way (90 feet), the varying setbacks to the first solar equipment on both sides of the highway, and the low profile of the solar arrays, the roadside views consist of essentially level fields of solar arrays and occasional substations visible in the distance, and the view of the distant horizon is not obstructed. Implementation of the VCIP solar and energy storage projects along SR-33 would add approximately 16 miles of solar fields on at least one side of SR-33. With implementation of the 50-foot setback distance from public road rights-of-way identified in MM AES-1, the solar arrays on either side of the highway would be separated by approximately 190 feet. For the motorists passing through this area, the nearest solar arrays would be at least 90 feet away. The overall viewing experience from the highway would be altered from flat agricultural fields to slightly raised but essentially flat solar fields. Motorists would not experience a tunnel effect because of the minimum setbacks and the distant views to the horizon would remain unobstructed due to the low-profile nature of the solar facilities. Three other cumulative projects would be located adjacent to VCIP solar and energy storage projects, with a combined length of solar arrays along the affected roadways of 1.0, 1.5, and 4.0 miles, respectively.

There are two instances where a VCIP connecting transmission line would cross over or run alongside an existing roadway in the vicinity of a cumulative project. The first is an approximately one-half mile segment of a VCIP transmission corridor that would run along the north side of W. California Avenue, opposite the existing Little Bear Solar Facility. The second is a VCIP transmission line crossing over W. Manning Avenue just east of the Scarlet Solar Project. In both instances, the combined visual effect would not be substantial given the brief duration of visual contact and the low to moderate visual sensitivity of the motorist viewer group.

To determine the cumulative effect on the motorist viewer group, the low to moderate visual quality of the existing setting is considered in combination with the low to moderate visual sensitivity of the motorist viewer group. While one utility-scale solar and energy storage project would represent a moderate level of change to the setting within a limited viewshed, the combined visual effect of all potential VCIP projects throughout the Plan Area would be substantial, and the addition of the cumulative projects would increase the substantial change to the existing visual character or quality of the Plan Area and its surroundings.

For the residential viewer group, there are several cumulative projects located within the viewsheds (i.e., within 3 miles) of the VCIP DFAs. In one case, existing dwellings would be located within one mile of both a potential VCIP solar/energy storage project and an existing solar project. Here, a cluster of five residences on S. San Mateo Avenue would be located adjacent to a VCIP solar project on one side, with the Giffen-A Solar Facility located 700 feet to the north. However, the intervening land is occupied by a mature almond orchard which screens the view of the existing solar facility from the residences, so there would be no cumulative visual effect.

There are no other cumulative projects in the Plan Area vicinity which would combine with the potential VCIP energy or infrastructure projects to result in a cumulative visual effect upon a sensitive viewer group. With respect to the commercial worker and recreational viewer groups, the instances where either group would be

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visually exposed to both a VCIP project and a cumulative project in the same viewshed would be brief and infrequent and thus would not represent a substantial cumulative effect with respect to these groups.

Overall, the visual effect of potential VCIP solar and infrastructure development combined with other pending, approved, and completed projects in the Plan Area vicinity would substantially alter the existing visual character or quality of the Plan Area and its surroundings. While implementation of Mitigation Measure AES-1 (i.e., increased setbacks from public roadways and existing residences) would reduce the impact for individual residences and motorists, at the overall scale of the VCIP combined with other pending, approved, and completed development, the incremental contribution of VCIP projects would be cumulatively considerable and the cumulative aesthetic impact would be *significant and unavoidable*.

Light and Glare

Existing nighttime conditions throughout the majority of the Plan Area are essentially dark with isolated light sources associated with its small communities, ranch complexes, agricultural processing plants, a federal prison, solar generating facilities, substations, and other facilities and features. The I-5 corridor is also a source of night lighting from the streams of headlights on the freeway and bright lighting at commercial centers at the interchanges.

Implementation of the VCIP solar and energy storage facilities would introduce new sources of light to the area, although exterior lighting would be mainly located at the site entrances, the operations yards, and the substation/switching stations. Lighting within the solar fields and energy storage facilities would be confined to the inverter/transformer pads, which would be activated only when needed by switch or motion sensors. There would be no lighting within the solar fields, along any internal access driveways, or around the perimeters of the facilities. As required by the Fresno County Ordinance Code section 820.3.080, fixed lighting would be low in intensity, 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, if needed for occasional nighttime equipment repair and replacement, would be directed away from external boundaries. The transmission lines would not include night lighting. The cumulative projects consist mainly of large-scale solar and energy storage projects which would be required to limit night lighting to essential purposes under the Fresno County Ordinance Code and substantially similar requirements contained in any other applicable ordinance codes (e.g., Kings County Development Code, sections 114(A)(5), 418(E)).

The other cumulative projects, such as the highway commercial development, the pistachio plants, and the Manning Substation, would also introduce new sources of light to the area. The highway commercial developments would include relatively bright lighting, but the increase in night lighting at those locations would be incremental given the presence of existing bright light sources at those locations. The pistachio plants and substation would have low intensity lighting.

Potentially sensitive receptors to unwanted illumination primarily include residences and motorists in the area. While the general increase in night lighting would be noticeable at existing residences and to passing motorists, the cumulative effect would not be substantial because the new sources of low-intensity light would be dispersed over a broad area and would not combine to create a substantial increase in nighttime lighting.

Regarding glare, solar panels are designed specifically to maximize absorption of sunlight and minimize loss of incident sunlight through reflection. At most, the modules may produce a dull reflection of low intensity light but {00081327.1}

would not result in intense glare that would adversely affect views in the area or cause discomfort to receivers. The cumulative solar and energy storage projects would be expected to produce similarly low levels of glare, and the cumulative effect would not be substantial.

Implementation of the VCIP energy and infrastructure projects would introduce new sources of light and low-level reflectance from hard surfaces to the Plan Area. However, the VCIP facilities and most cumulative projects (with the possible exception of the highway commercial projects) would be specifically designed and constructed to minimize light and glare, and would not combine to result in any substantial adverse effect on day or nighttime views in the area. The incremental contribution of VCIP projects would not be cumulatively considerable and the cumulative impact would be *less than significant*.

Outside Transmission Corridors

The outside transmission lines would largely consist of narrow-profile steel monopoles that would comprise minor visual elements in the context of broad scenic vistas. In all corridors, the new transmission lines would parallel existing transmission lines, which consist entirely of more visually dominant steel lattice towers. The addition of a new line of parallel monopoles would be noticeable but would not introduce a new visually dominant element to any existing view. Therefore, the outside transmission corridors would not have a substantial adverse effect on a scenic vista. Since the outside transmission corridors run through rural agricultural lands and rugged mountains and foothills, any cumulative development in their vicinity would consist mainly of rural residences. While most of the affected counties allow solar PV projects on agriculturally designated lands, it is not reasonably foreseeable which lands, if any, in the vicinity of the transmission corridors would be proposed for solar and energy storage development in the future. Also, additional transmission facilities or other public utility uses could be planned for nearby lands, but the extent of such facilities likewise is not reasonably foreseeable at this time. Because the nature and/or locations of such cumulative development are not reasonably foreseeable, descriptions and analyses would be speculative and thus are not discussed further.

The probable rural residences that could be constructed in the vicinity of the outside transmission corridors would not introduce visually dominant elements to any scenic vistas. As such, the combined visual effect of new transmission lines and new residences in viewsheds where transmission lines are already present would not be substantial, and the cumulative impact would be *less than significant*.

Regarding scenic resources, the outside transmission lines would cross over or run within sight of recognized scenic resources such as scenic highways within their settings, but would not result in substantial damage to such scenic resources. Any cumulative development in the vicinity would consist mainly of dispersed rural residences, which would not damage scenic resources along scenic highways or elsewhere. The combined visual effect of new transmission lines and new residences in or near scenic resources where transmission lines are already present would not be substantial, and the cumulative impact would be *less than significant*.

With regard to visual character and quality, the visual changes resulting from addition of new transmission lines alongside existing transmission lines would be noticeable but would not constitute a substantial change in the character and quality of their settings. Cumulative development in the vicinity of the outside transmission corridors would mainly consist of dispersed rural residences, which also would not result in a substantial change in the character and quality of the setting. The combined visual effect of new transmission lines and new residences within common viewsheds where transmission lines are already present would not result in a

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substantial change in the character and quality of the settings, and the cumulative impact would be *less than significant*.

Regarding lighting and glare, the outside transmission lines would not introduce new sources of light and glare, and thus would have little or no impact in this respect. As such, the contribution to any cumulative lighting and glare impacts would not be considerable, and the cumulative impact associated with the outside transmission lines would be *less than significant*.

The combined visual effects of the outside transmission lines and other cumulative development in their settings would not have a substantial adverse effect on scenic vistas, would not result in substantial damage to scenic resources, would not substantially degrade existing visual character or quality of their settings, and would not create new sources of substantial light and glare. Therefore, the cumulative aesthetic impact associated with the outside transmission corridors would be *less-than-significant*.

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Fresno County 2021b	County of Fresno. May 2021. <i>Scarlet Solar Energy Project – Draft Environmental Impact Report No. 7230.</i> https://www.fresnocountyca.gov/files/sharedassets/county/v/1/vision-files/files/55418-scarlet-solar-draft-eir.pdf
Fresno County 2023b	County of Fresno. April 2023. <i>Fresno County General Plan Background Report – Public Review Draft.</i> https://www.fresnocountyca.gov/files/sharedassets/county/v/2/public-works-and-planning/development-services/planning-and-land-use/general-plan/fcgpr-background-report-2023-05-10.pdf
Fresno County 2023d	County of Fresno. September 2023. <i>Key Energy Storage Project – Draft Environmental Impact Report No. 8189.</i> https://www.fresnocountyca.gov/files/sharedassets/county/v/1/public-works-and-planning/development-services/planning-and-land-use/environmental-impact-reports/key-energy-storage/key_energy_storage_project_deir_sep_2023-print.pdf
Fresno County 2024b	Fresno County. February 2024. <i>Fresno County General Plan Policy Document, Final Draft.</i> https://www.fresnocountyca.gov/files/sharedassets/county/v/3/public-works-and-planning/development-services/planning-and-land-use/environmental-impact-reports/general-plan-review/fcgpr_general-plan_prd-county_01-12_24-clean.pdf
Fresno County 2024c	Fresno County. February 2024. <i>Fresno County Zoning Ordinance.</i> https://www.fresnocountyca.gov/files/sharedassets/county/v/3/public-works-and-planning/zoning-ordinance/zoning-ordinance-final.pdf
Fresno County 2024f	County of Fresno. June 2024. <i>Sonrisa Solar Project – Draft Environmental Impact Report No. 7869.</i> https://www.fresnocountyca.gov/files/sharedassets/county/v/1/public-works-and-planning/development-services/planning-and-land-use/environmental-impact-reports/7869-sonrisa-solar-park/sonrisa-deir_june_2024.pdf
Fresno County 2025c	County of Fresno. <i>Guidelines for Preparing A Solar Electrical Generation Facility Reclamation Plan.</i> Accessed April 10, 2025. https://www.fresnocountyca.gov/Departments/Public-Works-and-Planning/divisions-of-public-works-and-planning/development-services-division/planning-and-land-use/photovoltaic-facilities/photovoltaic-facilities-p-3106

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Kern County 2009	Kern County. September 2009. <i>Kern County General Plan</i> . https://kernplanning.com/planning/planning-documents/general-plans-elements/
Kings County 2010b	Kings County. <i>2035 Kings County General Plan – Resource Conservation Element</i> . Adopted January 26, 2010. http://www.countyofkings.com/home/showdocument?id=3112
LA County 2015	Los Angeles County Department of Regional Planning. June 2015. <i>Antelope Valley Area Plan</i> . https://planning.lacounty.gov/long-range-planning/antelope-valley-area-plan/
Merced Co. 2013a	Merced County. December 2013. <i>2030 Merced County General Plan</i> . https://www.co.merced.ca.us/2018/Adopted-General-Plan
Monterey County 2010a	County of Monterey. October 2010. <i>2010 Monterey County General Plan</i> . https://www.countyofmonterey.gov/government/departments-a-h/housing-community-development/planning-services/current-planning/general-info/2010-monterey-county-general-plan-adopted-october-26-2010
NREL 2018	National Renewable Energy Laboratory (NREL). July 2018. <i>Research and Analysis Demonstrate the Lack of Impacts of Glare from Photovoltaic Modules</i> . https://www.nrel.gov/state-local-tribal/blog/posts/research-and-analysis-demonstrate-the-lack-of-impacts-of-glare-from-photovoltaic-modules.html
San Benito Co. 2015b	County of San Benito. July 2015. <i>San Benito County 2035 General Plan</i> . https://www.sanbenitocountyca.gov/home/showpublisheddocument/5859/637347294134470000
San Joaquin Co. 2016	County of San Joaquin. December 2016. <i>San Joaquin County General Plan Policy Document</i> . https://www.sjgov.org/commdev/cgi-bin/cdyn.exe?grp=planning&htm=gp2035
SPW 2018	Solar Power World (SPW). February 2018. <i>Fixed-tilt vs. Tracker: Why a one-size-fits-all approach can limit solar production</i> . https://www.solarpowerworldonline.com/2018/02/fixed-tilt-vs-tracker-one-size-fits-approach-can-limit-solar-production/
Stanislaus Co. 2016	County of Stanislaus. August 2016. <i>Stanislaus County General Plan</i> . https://www.stancounty.com/planning/pl/general-plan.shtm

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4.2. AGRICULTURE AND FORESTRY RESOURCES

This section includes the following discussion and analysis related to agriculture and forestry resources: existing physical and regulatory setting; methodology and criteria for evaluating impacts; and the results of the impact assessment, including the identification of potentially significant impacts and corresponding mitigation measures to avoid or substantially lessen such impacts to the extent feasible, as appropriate.

PEIR Scoping Comments

During the PEIR Scoping process, the District received three letters containing comments regarding agricultural resources (see PEIR Scoping Report in Appendix A of this document). These comments are summarized below.

California Department of Conservation (CDOC), Division of Land Resource Protection

The comment letter from CDOC's Division of Land Resource Protection notes that the Plan Area contains Prime Farmland, Farmland of Statewide Importance, and Unique Farmland, and that portions of the Plan Area are subject to Williamson Act contracts. The comment letter provides detailed advice on addressing impacts and mitigation measures for agricultural land, and on addressing compatibility with the Williamson Act. For the full text of the CDOC's comments, please refer to Comment Letter C in Exhibit I of the PEIR Scoping Report in Appendix A of this document.

Planning and Conservation League (PCL) et al. & Pacific Coast Federation of Fishermen's Associations

PCL et al. commented that the proposed VCIP would "facilitate the generation and distribution of up to 20,000 MW converting roughly 130,000 acres of agricultural lands to municipal and industrial uses." This letter further commented: "The potential for conversion of agricultural land to municipal and industrial use could conflict with local land use planning objectives. A robust assessment of impacts and the implementation of mitigation measures are indispensable." The comment letter submitted by Pacific Coast Federation of Fishermen's Associations restated the letter submitted by PCL et al. and included PCL's letter as an attachment. For the full text of the comments submitted by PCL et al. and Pacific Coast Federation of Fishermen's Associations, please refer to Comment Letters G and H in Exhibit I of the PEIR Scoping Report in Appendix A of this document.

[Note: Potential impacts related to agricultural resources are addressed in Section 4.2.3. *Environmental Impact Analysis*, below.]

4.2.1. Environmental Setting

4.2.1.1. AGRICULTURAL RESOURCES

Agricultural Setting

According to the California Department of Conservation's (CDOC) Farmland Mapping and Monitoring Program (FMMP), in 2018 (most recent year for which data is available), the State of California contained 32.0 million acres of agricultural land, of which 5.0 million acres were Prime Farmland (CDOC 2023). The total value of agricultural products sold in California in 2022 was \$55.8 billion, which ranked highest in the nation and represented 10.4 percent of the U.S. total of \$536.6 billion (CDFA 2024).

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In 2018 (most recent data available), Fresno County had a total of 2,177,597 acres of farmland, representing about 7 percent of the state total. Fresno County's farmland includes approximately 672,208 acres of Prime Farmland, which comprise 31 percent of the County's total farmland, and approximately 13.4 percent of the state's Prime Farmland (CDOC 2023). The value of agricultural products in Fresno County in 2022 was \$8.1 billion, which ranked second in California (after Tulare County), and represented about 14.5 percent of the state total (CDFA 2024).

The service area of the Westlands Water District encompasses 614,700 acres, of which approximately 564,000 acres are currently considered to be irrigable (with the remainder occupied by small urban places, ranch complexes, commercial centers, agricultural processing facilities, temporary solar facilities (such lands are irrigable following decommissioning unless they are permanently retired lands as described below), Naval Air Station Lemoore, and other non-agricultural uses). However, due to Westlands Water District land acquisition programs and water supply limitations, especially in dry years, the average acreage under cultivation in the District between 2015 and 2024 was approximately 374,293 acres, with the remaining 189,640 acres idled or fallowed (WWD 2025). Throughout the District, 56 different crops were harvested in 2024, including various nuts, fruits, vegetables, grains, and silage crops. About 42 percent of the cultivated acreage was planted in tree crops such as almonds (72,919 acres) and pistachios (85,112 acres), followed by tomatoes (42,654 acres), grapes (raisins, table, wine – 12,236 acres), cotton (23,007 acres), wheat (23,071 acres), and garlic (12,967 acres), with the remaining crops each covering from 10 to 8,000 acres (WWD 2024). Agricultural production in the District generated \$4.7 billion in economic activity in 2024, approximately 58 percent of Fresno County's total (WWD 2025a).

The Plan Area includes approximately 534,800 acres of irrigated and non-irrigated agricultural land comprising the Fresno County portion of the District's service area. The Kings County portion of the District, comprising approximately 79,900 acres, is not included in the Plan Area. The agricultural lands in the Plan Area are planted with permanent tree crops and annual row crops, with the varieties of crops reflected in the crop descriptions above. Agriculture-related features in the Plan Area include scattered ranch complexes with supporting features such as irrigation canals and piping, drainage ditches, farm lanes, electric power lines, and worker housing. In addition, the District has maintenance facilities and offices in the Plan Area, and also owns and operates the irrigation water distribution system and groundwater recharge facilities within its service area.

Historical Context

The Plan Area lies entirely within the service area of the Westlands Water District, 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 Firebaugh in the north to Kettleman City in the south (see Figure 2.2-1 in Chapter 2). In 2004, the District acquired the Broadview Water District and incorporated its approximately 9,636 acres into the overall District service area. The northern portion of the Plan Area includes the former Broadview Water District.

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 partial completion of the San Luis Canal by the U.S. Bureau of Reclamation (USBR). Currently, the District's service area includes 614,700 acres which comprise approximately 88 percent of the San Luis Unit service area. Under its current contract with the USBR, the District is entitled to receive 1.195 million acre-feet of surface water delivery during years when 100 percent of this CVP water is allocated.

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As described in detail below, the soils in most of the 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 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 the Sacramento/San Joaquin River Delta near Chipps Island. An 82-mile segment of the drainage canal, commencing near Five Points and extending northwest to the Kesterson Reservoir near Los Banos, was completed by 1975 but then construction was stopped due to lack of government funding and water quality concerns. 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 the District 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) to identify and evaluate alternative means of managing the regional shallow groundwater table within the 298,000-acre “drainage-impaired” area by providing drainage service and/or reducing contributions of water to the shallow water table through land retirement. The drainage service would involve construction of complex and costly systems for conveyance, treatment, and reuse of treated drainage water.

Project review and the EIS process led to the USBR’s selection of an alternative involving retirement of 194,000 acres from irrigation (the In-Valley/Water Needs Land Retirement Alternative). The remaining lands within the drainage-impaired area would stay in production and would be provided with drainage service to maintain the water and salt balance for sustainable agriculture within those areas (USBR 2006).

A project feasibility report prepared after the USBR issued its Record of Decision (ROD) estimated total construction costs 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 its boundaries; the United States would have exclusive right to the use of all CVP water made available to the District in excess of 895,000 acre-feet for other Project purposes; and the District will permanently retire not less than 100,000 acres from irrigated agriculture, among other things. The retired lands are to be used for drainage water management, renewable energy projects, upland habitat restoration, and other uses (USBR 2015).

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Site Conditions within the Plan Area

Geomorphology and Soils

The parent materials of the soils in the Plan Area 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 geomorphologic processes resulted in the formation of two distinct landform types in the Plan Area: 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 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 formation of the alluvial fans. 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).

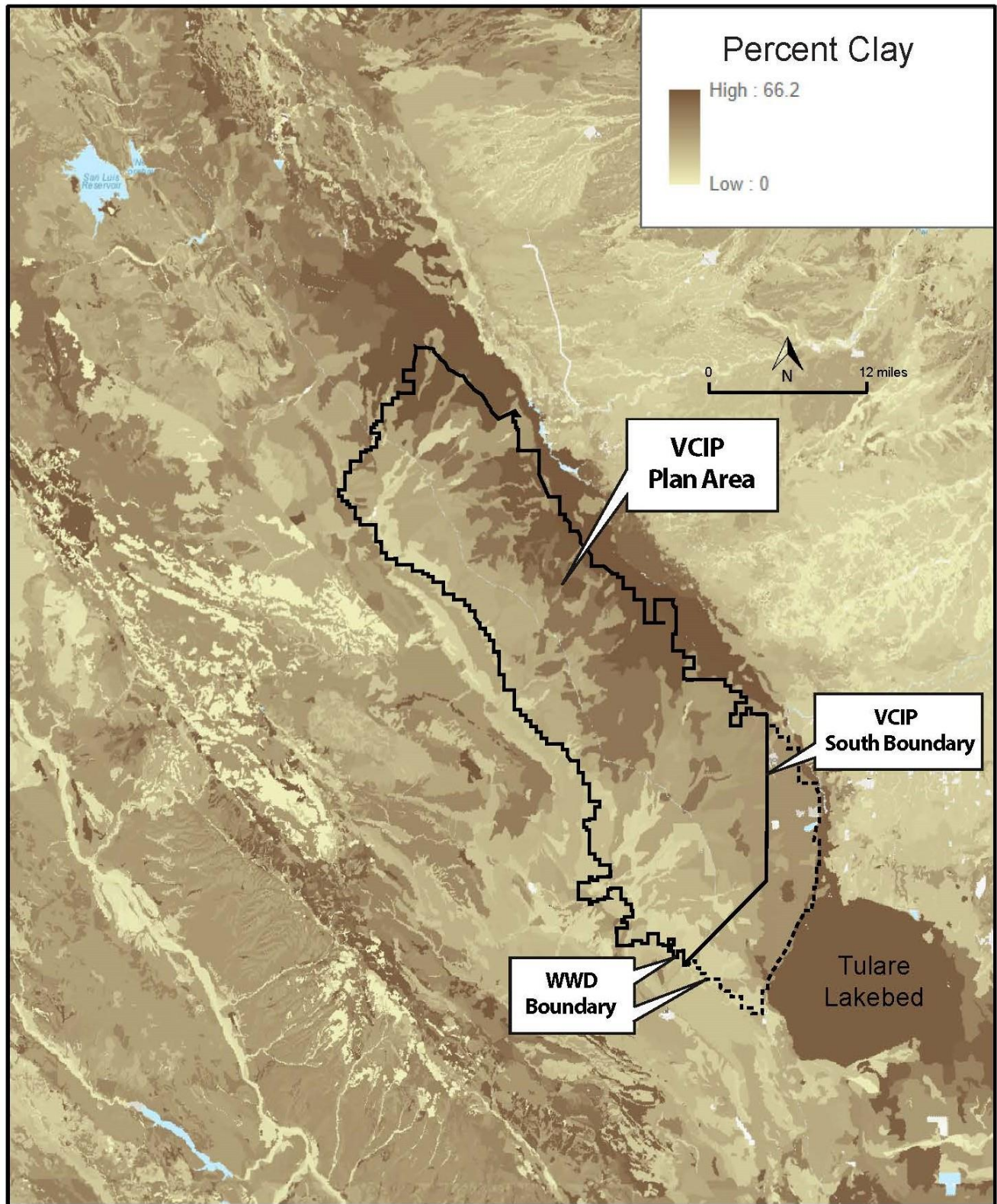
NRCS Soil Survey

The most recent comprehensive soil survey of Western Fresno County was completed in 2006 by the National Resources Conservation Service (NRCS), formerly the Soil Conservation Service (SCS). According to the NRCS Soil Survey, there are five main soil types in the Plan Area, including the Ciervo, Cerini, Tranquillity, Lethent, and Westhaven soils. The Ciervo series is characterized by very deep, moderately well drained, clay soils and is found on the eastern portions of alluvial fans along the center of the Plan Area. The Cerini series is characterized by very deep, well drained, clay loam soils and is found on alluvial fans in the northwestern and south-central portions of the Plan Area. The Tranquillity series is characterized by very deep, somewhat poorly draining clay soils and is found on distal portions of alluvial fans in the northeastern portion of the Plan Area. The Lethent series is characterized by very deep, moderately well drained, clay loam soils and is found on unburied fan remnants in the southeastern portion of the Plan Area. The Westhaven series is characterized by very deep, well drained, loam or clay loam soils and is found on alluvial fans in the south central and southwestern portions of the Plan Area (NRCS 2006).

The dominant soil textures within the Plan Area include clay loam, clay, and sandy loam. The clay loam soils are found throughout the Plan Area, while the clay soils are dominant in the northeastern area located east of the California Aqueduct/San Luis Canal and north of State Route 145 (see Figure 4.2-1). The sandy loam soils are found in limited areas along the foothills of the Diablo Range and along major drainage courses. The soil texture affects both hydraulic conductivity (percolation rate) and drainage capability, with the fine clay soils exhibiting the poorest absorption and drainage capabilities, while the coarser textured soils, such as the sandy loams, having higher hydraulic conductivity and drainage capability. In general, the drainage capability and hydraulic conductivity decreases from west to east in the Plan Area, corresponding to the increasingly high clay content of the soils.

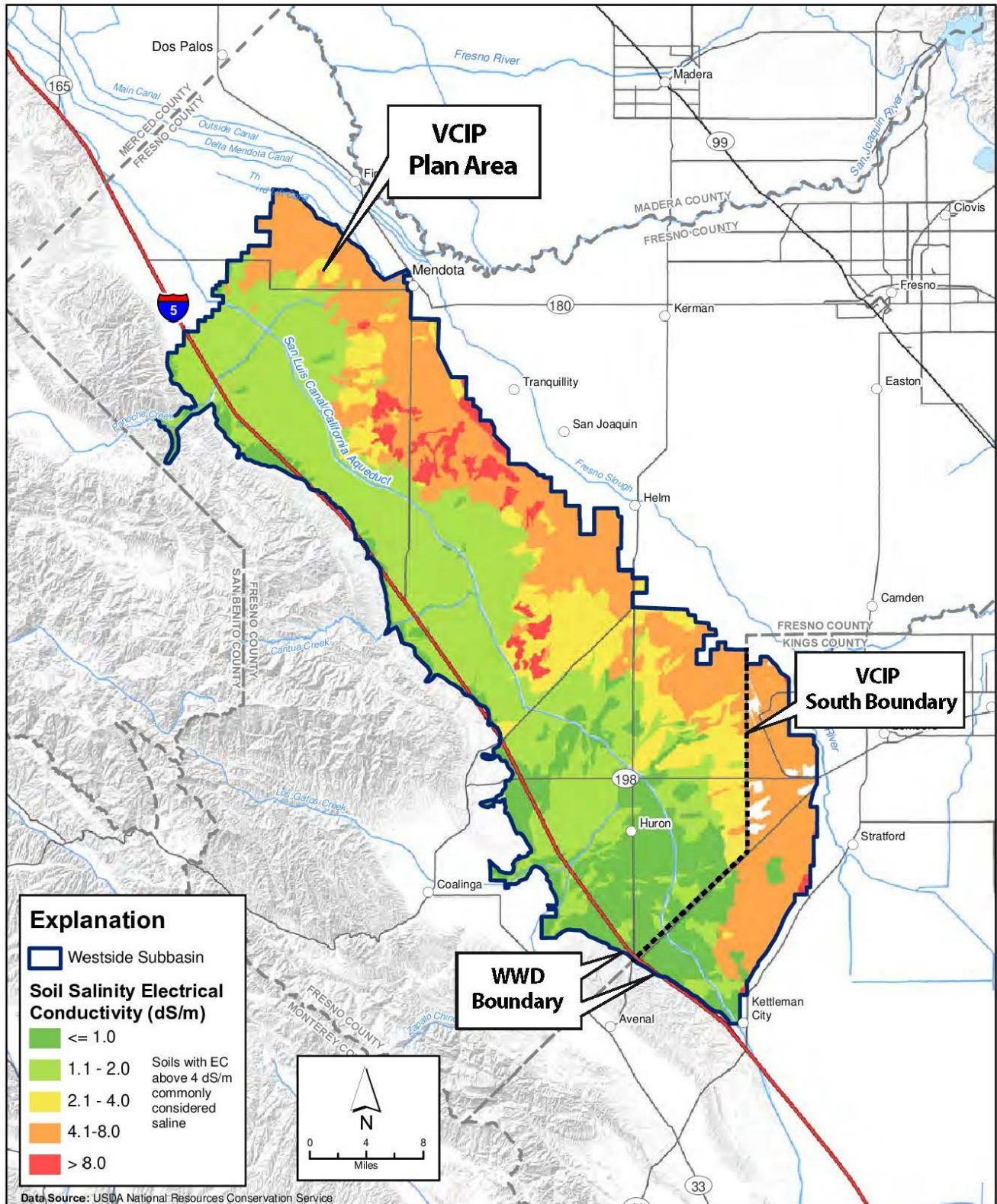
Another important soil characteristic is salinity because it can greatly influence the ability of the soil to support crops. While crops vary in their tolerance for elevated soil salinity, the productivity of most crops becomes impacted when salt concentration exceeds 2,560 mg/L (ppm), or when electrical conductivity (EC) levels are above 4 deciSiemens per meter (dS/m). In general, soil salinity increases from west to east within the Plan Area, with the southern portion having lower salinity than the northern portion (see Figure 4.2-2).

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Source: NRCS, 2008

Soils - Percent Clay
Figure 4.2-1



Source: DWR, 2020

Soil Salinity

Figure 4.2-2

Higher salinity levels are related to both lower hydraulic conductivity and poor drainage characteristics. Areas with the highest salinity are located in the clay soils of eastern portion of the Plan Area where salinity commonly exceeds 4 dS/m. Salinity is further discussed below under 'Groundwater Conditions'.

NRCS Land Capability Classification

Under the soils classification system of the NRCS, soils are classified according to eight broad 'Land Capability' classes, with Class 1 and 2 soils being the most fertile and well suited for cultivation. In general, soil classifications are associated with soil texture such that sandy loam soils have higher soil classifications and clayey soils tend to have lower classifications. In the Plan Area, the Class 1 and 2 soils are represented by the Cerini and Westhaven clay loams occurring in the west, while the Class 3 soils comprise the Ciervo, Tranquillity, and Lethent clay soils in the eastern portions of the Plan Area. The NRCS describes Class 3 soils as having "severe limitations that reduce the choice of plants or require special conservation practices, or both." Without irrigation, all soils within the Plan Area are classified as Class 7 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" (NRSC 2006).

Farmland Classification Systems

CDOC Important Farmlands Mapping

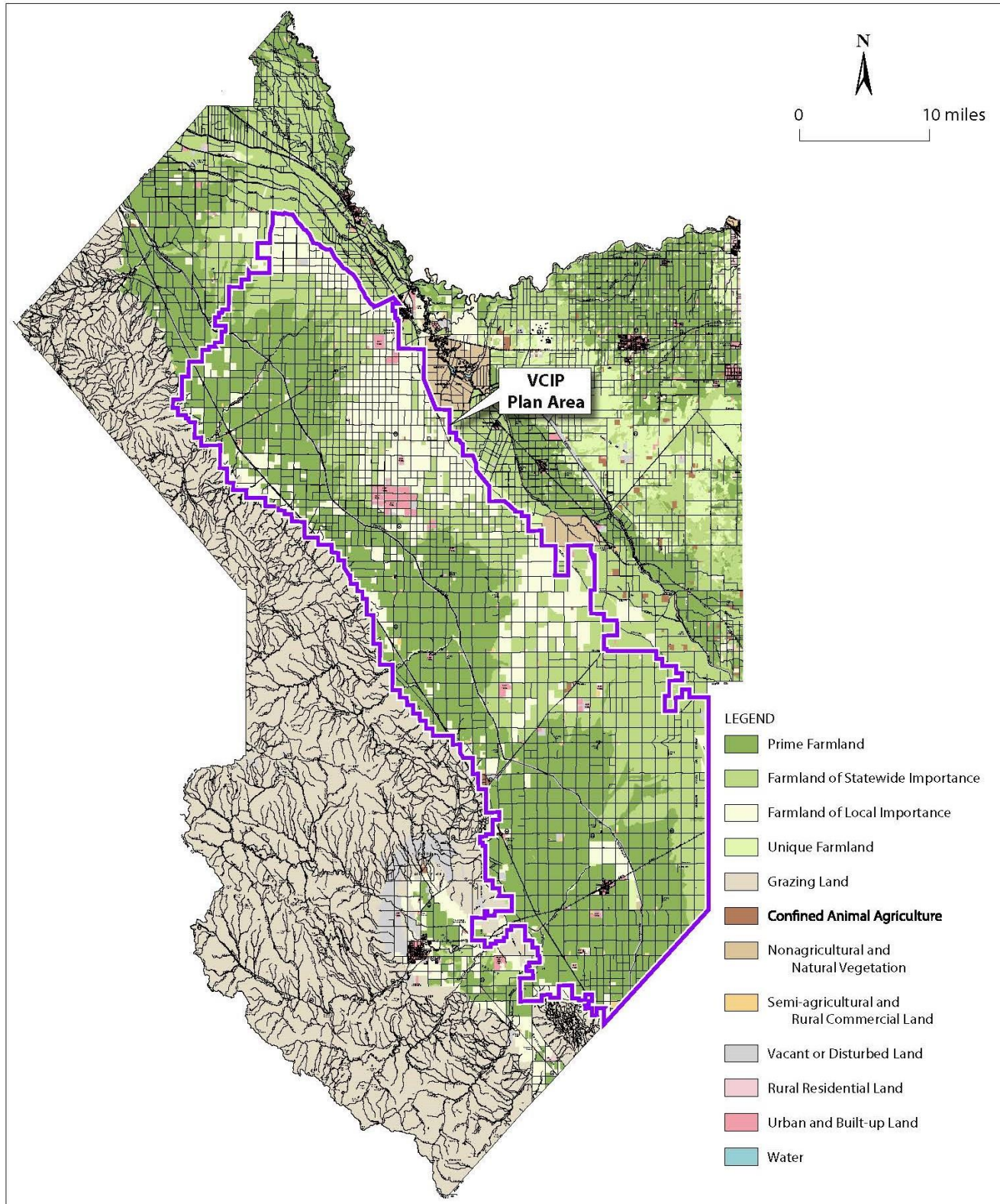
The California Department of Conservation (CDOC) administers and maintains the statewide Farmland Mapping and Monitoring Program (FMMP), under which land is mapped by several categories including Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Farmland of Local Importance, Grazing Land and other non-agricultural categories (CDOC 2023a). The 2020 FMMP mapping for the Plan Area is shown in Figure 4.2-3. The categories included in the FMMP are described below, along with the approximate amount of land in each category that occurs within the Plan Area.

Prime Farmland. Prime Farmland is defined as lands 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. Prime Farmland must have been used for irrigated agricultural production at some time during the four years prior to the mapping date. Approximately 54 percent of the Plan Area is mapped as Prime Farmland, including most of the lands west of the San Luis Canal. Within the Development Focus Areas (DFAs), approximately 28 percent of the lands are mapped as Prime Farmland.

Farmland of Statewide Importance. Farmland of Statewide Importance is similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Farmland of Statewide Importance must have been used for irrigated agricultural production at some time during the four years prior to the mapping date. Approximately 29 percent of the Plan Area is mapped as Farmland of Statewide Importance, almost all of which is located east of the San Luis Canal. Within the DFAs, approximately 24 percent of the lands are mapped as Farmland of Statewide Importance.

Unique Farmland. Unique Farmland consists of land other than Prime Farmland and Farmland of Statewide Importance that has a special combination of soil quality, growing season, and moisture supply needed to produce sustained high yields of a specific crop.

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Base map: CDOC, 2023

VCIP - Important Farmlands
Figure 4.2-3

These lands have lesser-quality soils than Prime Farmland or Farmland of Statewide Importance. They are typically 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. The lands designated as Unique Farmland comprise approximately 0.3 percent of the Plan Area, including: a narrow strip of land of about 2,000 acres along the northeast Plan Area boundary near Tranquillity; and an approximately 750-acre parcel along the west side of the San Luis Canal east of the City of Huron. Within the DFAs, approximately 0.15 percent of the lands are mapped as Unique Farmland.

Farmland of Local Importance. Farmland of Local Importance includes all farmable lands within Fresno County that do not meet the definitions of Prime, Statewide Importance, or Unique. This includes land that is or has been used for irrigated pasture, dryland farming, confined livestock and dairy, poultry facilities, aquaculture and grazing land. Approximately 14 percent of the Plan Area is mapped as Farmland of Local Importance. These lands mainly consist of the drainage-impaired farmland acquired by the District and retired from irrigated agriculture in the eastern areas of the Plan Area located east of the San Luis Canal and north of State Route 145. Other small pockets of Farmland of Local Importance occur throughout the Plan Area. Within the DFAs, approximately 48 percent of the lands are mapped as Farmland of Local Importance.

Grazing Land. Grazing Land includes land on which the existing vegetation is suited to the grazing of livestock. There are several isolated parcels of mapped Grazing Land distributed along the west boundary of the Plan Area along the foot of the Diablo Range. None of these lands are within DFAs.

Rural Residential Land. Rural Residential Land includes residential areas of one to five structures per ten acres. The Plan Area includes several areas mapped as Rural Residential Land; these mainly consist of small population centers such as Cantua Creek, Three Rocks, Westside, and Five Points, as well as some large ranch complexes. Rural Residential Lands and small communities are excluded from DFAs.

Urban and Built-up Land. Urban and Built-up Land includes 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. Within the Plan Area, lands mapped as Urban and Built-up Land include the Cities of Huron and Mendota, several utility-scale solar facilities, substations, and highway commercial centers. Urban and Built-up Land is excluded from the DFAs.

Other Categories. The Plan Area includes relatively small areas which are mapped in other FMMP categories, including: Confined Animal Agriculture, Nonagricultural and Natural Vegetation, Semi-Agricultural and Rural Commercial Land, Vacant or Disturbed Land, and Water.

In summary, the vast majority of lands in the Plan Area are included in three FMMP categories, including: Prime Farmland (~54% of the Plan Area); Farmland of Statewide Importance (~29%); and Farmland of Local Importance (~14%). Approximately 3 percent of the Plan Area is included in other FMMP categories. The DFA lands are similarly dominated by these three FMMP categories, but in different proportions, including: Prime Farmland (~28% of DFA lands); Farmland of Statewide Importance (~24%); and Farmland of Local Importance (~48%). The DFA lands include no other FMMP categories (DOC 2023a).

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Groundwater Conditions

The Plan Area is located within the Westside Subbasin which contains two general water bearing zones: an Upper Aquifer situated above a nearly impervious Corcoran Clay layer; and a Lower Aquifer below the Corcoran Clay. In the Plan Area, the depth of the Corcoran Clay layer ranges from approximately 400 to 800 feet below the ground surface and ranges in thickness from 25 to 100 feet (DWR 2020, Figs. 2-29 and 2-30). In the southwestern portion of the Plan Area, near the City of Huron, the Corcoran Clay layer is absent such that the Upper and Lower Aquifer is a single unit (WWD 2021b). As discussed above, the eastern portions of the Plan Area are characterized by fine-textured clayey soils with low permeability and slow groundwater movement. These upper clay layers are slow draining soils which result in a high or “perched” groundwater table that is typically within 5 to 15 feet of the ground surface throughout the eastern portions of the Plan Area (WWD 2015, 2017b).

Soil and Groundwater Impairment Due to Salinity

Under irrigated agriculture, soluble salts and selenium in the native soils are dissolved and are leached into the groundwater. As discussed above, 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 results 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).

The elevated salt concentrations in soil and groundwater tend to inhibit plant growth and reduce yields. In general, plants can absorb only pure or near-pure water such that 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. However, there is some 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 2014). Soil salinity is measured by concentration of Total Dissolved Solids (TDS) measured in milligrams per liter (mg/L)¹, or by Electrical Conductivity (EC) measured in deciSeimens per meter (dS/m). Most row crops and most tree crops (nuts and fruits) have salt tolerances of less than 1,280 mg/L (2 dS/m); few crops have salt tolerances greater than 1,280 mg/L; and a few grains and cotton can tolerate salt levels exceeding 2,560 mg/L (4 dS/m)(FAO 2020). Soils are considered “saline” at EC of 4 dS/m (DWR 2020, Fig. 2-24) or at TDS of 2,000 mg/L (USBR 2006, p. 6-3).

Within the Westside Subbasin, the soil salinity 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 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 Plan Area. In addition, surface water includes some salts, which further exacerbates the soil salinity imbalance and salt mass loading. Also, 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

¹ 1 mg/L = 1 part per million [ppm]
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have the dual effect of waterlogging 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 of some salts from the near-surface groundwater. Nevertheless, substantial acreage within the District (including large portions of the Plan Area) has been retired from irrigated agriculture since the early 2000s because the groundwater drainage problem was too severe (USBR 2006, p. 13-2).

As mentioned, most vegetable and fruit crops have salt tolerances of less than 1,280 mg/L, and a few grains and cotton can tolerate salt levels exceeding 2,560 mg/L (FAO 2020). EC mapping contained in the Groundwater Sustainability Plan (GSP) for the Westside Subbasin shows that EC levels in the eastern portions of the Plan Area are greater than 2 dS/m (TDS > 1,280 mg/L), with the majority of these lands exceeding the 4 dS/m (TDS > 2,560 mg/L) salinity threshold, and with several areas exceeding 8 dS/m (TDS > 6,400 mg/L) (DWR 2020, Fig. 2-24)(see PEIR Figure 4.2-2). The areas mapped with EC levels higher than 2 dS/m correspond to areas mapped by FMMP as Farmlands of Statewide Importance and Farmlands of Local Importance, which covers an area of approximately 220,000 acres, which is also the area with clay soils. (It is noted that the EC measured in surface water delivered from the San Luis Canal from mid-May to mid-July 2024 ranged from approximately 0.24 to 0.44 dS/m (=TDS ~154 to 282 mg/L)[DWR 2024].) 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 2018a.)

USBR's sampling of the shallow groundwater for selenium indicated that concentrations within the Plan Area range from 5 to 1,000 ppb, with the highest concentrations occurring in the central and northern portions of the Plan Area (USBR 2006, Fig. 6-2). The State of California Public Health Goal (PHG) for selenium in drinking water is 30 parts per billion (ppb)²(OEHHA 2010). 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 were all found to be present at elevated concentrations (USBR 2006).

Irrigation Water Supply Constraints

Irrigation water for most of the Plan Area is largely provided by surface water delivered through the District. In the early 2000s, the District acquired approximately 89,300 acres of privately-owned land within District boundaries and retired these lands from irrigated agriculture due to drainage impairment and high salinity levels or to reallocate the water supply to other cropland. Since then, no imported surface water or pumped groundwater has been applied to those retired lands with non-irrigation covenants, although dry farming for winter wheat continues on lands leased to area growers. Farmlands within the Plan Area that are not retired remain eligible to receive surface water deliveries. Currently, the maximum CVP water allocation available to Eligible Cropland in the District is approximately 2.6 acre-feet per acre per year (i.e., 1,195,000 AFY annual entitlement / 470,000 irrigable acres within the District) when the CVP provides 100 percent of the contract amount.

In recent years, actual deliveries of CVP contract water to the District have been dramatically curtailed. Also, passage of the Central Valley Project Improvement Act and adoption of other regulations dedicated more water to fish and wildlife places the District at a very low priority for water deliveries during times of shortage. During the 10 years between 2015 and 2024, the District received an average of 36 percent of its CVP contract water. In 2014, 2015, 2021 and 2022, the District received zero allocations of CVP contract water, and in 2016

² 1 ppb = 1 microgram per liter [µg/L].
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received 5 percent of its CVP contract water (WWD 20234). To meet the irrigation requirements of planted crops under such conditions, private landowners on non-District-owned lands augment reduced CVP water supplies with pumped groundwater or by acquiring supplemental water. But since the groundwater is relatively high in salinity, the generally low salinity tolerant crops limits the effectiveness of blending groundwater with higher quality CVP contract. Due to the unavailability of CVP contract water deliveries during the years noted above, combined with the quality and quantity constraints on groundwater pumping, an average of approximately 189,640 acres were fallowed annually within the District between 2015 and 2024, representing 34 percent of the irrigable farmland in the District (WWD 2024).

In January 2020, the District’s Board of Directors adopted the Groundwater Sustainability Plan (GSP) for the 622,215-acre Westside Subbasin, which includes the District’s entire service area of 614,700 acres. The GSP process determined that the long-term sustainable yield across the subbasin is 305,000 acre-feet per year (WWD 2022). Under the GSP, there are approximately 525,000 acres within the subbasin that are eligible to receive a Groundwater Allocation, subject to limits on the volume of groundwater that can be pumped in a given year without negative impacts identified in the GSP. The groundwater allocation program includes a “transition period” from 2022 to 2030, in which a uniform annual allocation is initially established at 1.3 acre-feet per acre and then subsequently reduced each year by 0.1 AF per acre until 2030 when the allocation would reach 0.6 AF per acre (WWD 2022). For purposes of this PEIR, the available groundwater supply for Eligible Cropland in the Plan Area is assumed to be 0.6 AF per acre per year, as construction would be projected to start in 2028, with full buildout in 2038. (See Section 4.10. *Hydrology and Water Quality*, item ‘e’, for a full discussion of the District’s Groundwater Sustainability Plan.)

Transmission Corridors Outside the VCIP

The delivery transmission corridors extending outside the Plan Area to load centers would have a total length of approximately 348 miles, of which about 95 miles would pass through agricultural resources composed of “Prime Farmland,” “Farmland of Statewide Importance” and “Unique Farmlands.”

4.2.1.2. FORESTRY RESOURCES

VCIP Energy Resource and Infrastructure Plans

The Plan Area does not contain any land defined as forest land (as defined by Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or land zoned Timberland Production (as defined by Government Code section 51104(g)). Almost all of the lands available for timber production in Fresno County lie within the southern part of the Sierra National Forest and the northern portion of the Sequoia National Forest (Fresno County 2000a).

Transmission Corridors Outside the VCIP

The delivery transmission lines extending outside the Plan Area would traverse 10 counties en route to the regional load centers. The northern transmission route would traverse the San Joaquin Valley floor from the Newpoint Substation northwestward to the vicinity of the Dos Amigos Pumping Plant, where it would cross over Interstate 5 (I-5) and follow the lower elevations of the Diablo Range north to the Tracy and Tesla Substations. The land cover along the northern transmission route consists primarily of agricultural land on the valley floor, and in the foothill segments it consists entirely of annual grasslands which transitions to blue oak woodlands on the higher terrain to the west. No part of the northern transmission corridor passes through forest lands (USFS 2017).

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The western transmission corridor would commence at the Newpoint Substation on the valley floor and extend westward across the Coast Ranges of San Benito and Monterey Counties for a total of 76 miles until reaching the Moss Landing Substation on Monterey Bay. The route primarily traverses mountainous terrain with two small agricultural valleys at Panoche Valley and Paicines. The land cover consists of coastal range woodland and chaparral scrub where the dominant forest types are blue oak in the east and coast live oak in the west near the coast (USFS 2017).

The southern transmission route would extend southward on the San Joaquin Valley floor until reaching the Tehachapi Range southeast of Bakersfield. The transmission route would then run southeastward over the mountains for about 21 miles, running adjacent to the existing SCE 500 kV transmission line. Crossing the Tehachapi Range, the alignment traverses two forest ecosystem types including 12 miles of sparsely wooded blue oak woodland, and 9 miles of moderately to densely wooded canyon live oak forest (USFS 2017). South of the Tehachapis, the final 40-mile segment of the southern transmission corridor passes through the Antelope Valley where the dominant ecosystem is juniper woodland. This area is characterized by open desert with sparse coverage by junipers and other species endemic to the high desert.

4.2.2. Regulatory Context

4.2.2.1. VCIP ENERGY RESOURCE PLAN

Federal

There are no federal regulations pertaining to agriculture and forestry resources that are applicable to the VCIP.

State

Williamson Act

The California Land Conservation Act of 1965, commonly referred to as the Williamson Act (Gov. Code, § 51200 et seq.), enables local governments to enter contracts with private landowners to place lands within “Agricultural Preserves,” thus restricting use of those lands to agricultural, related open space, or compatible uses. In return, landowners receive reduced property tax assessments. The initial term of a Williamson Act contract is 10 years pursuant to Government Code section 51244(a), 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 notice is filed, then the contract does not renew itself; the use restrictions and reduced tax assessment on the property begin to phase out of the Agricultural Preserve Program over a 9-year period. Non-renewals involve no penalties, while contract cancellations must meet certain findings and currently are subject to a penalty of 12.5 percent of the property’s unrestricted 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 landowners who entered 20-year Farmland Security Zone contracts (Government Code sections 51296-51297). The same automatic contract renewals occur annually as they do under Williamson Act {00081343.1}

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 of 25 percent of the property's unrestricted value.

In general, each Williamson Act contract or Farmland Security Zone contract stipulates that the property in an Agricultural Preserve or Farmland Security Zone may not be used for any purpose than the production of agricultural products for commercial purposes and related or compatible uses. Utility infrastructure such as transmission lines are deemed compatible uses within any agricultural preserve under the Williamson Act (Government Code, section 51238).

A large portion of the lands within the Plan Area is owned by the District, as shown in the most recent mapping of Williamson Act lands by the California Department of Conservation, depicted in Figure 4.2-3. Under Government Code section 51295, any Williamson Act or Farmland Security Zone contracts in effect at the time of the District's acquisition of these lands were deemed null and void since public agencies may not be parties to such contracts. As such, none of the District-owned lands within the Plan Area are subject to Williamson Act or Farmland Security Zone contracts. Upon transfer of ownership of such lands to private parties, however, the Government Code requires that these lands be reenrolled in the Williamson Act program with new contracts. Remaining lands within the Plan Area are largely under Williamson Act (10-year) contracts, and a few parcels are under Farmland Security Zone (20-year) contracts (CDOC 2016).

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

Senate Bill (SB) 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, SB 618 allows for rescission of existing contracts for the purpose of placing the contracted lands into solar-use easements for photovoltaic electricity generation. Contract rescission under SB 618 is permitted only if it can be shown that the lands are physically impaired or marginally productive for agricultural production.

Water Code Sections 37860-37861 (AB 2661)

AB 2661, approved on September 25, 2024, and chaptered as Water Code sections 37860-37861, specifically authorizes the Westlands Water District to provide, generate, and deliver solar photovoltaic electricity and to construct, operate, and maintain improvements and property necessary for generating and delivering electricity generated from its facilities. The bill would require the District to use the electricity generated for the District's own purposes, with the ability to sell surplus electricity to a public or private entity engaged in the distribution or sale of electricity. The bill also authorizes the District to construct, operate, and maintain energy storage systems and electrical transmission lines within its boundaries. The bill also requires that the District establish a community benefits agreement plan for the VCIP and related projects, with specific benefits to include but not limited to: job creation and training programs for local residents, use of local businesses and vendors, and financial contributions to community development projects and programs.

California Public Resources Code – Forest Land and Timberland

The California Public Resources Code governs forestry, forests, and forest resources, as well as range and forage lands, within the state. "Forest land" is defined by Public Resources Code Section 12220(g) as "land that {00081343.1}"

can support 10-percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits.” “Timberland” is defined by Public Resources Code Section 4526 as “land, other than land owned by the federal government... which is available for, and capable of, growing a crop of trees of any commercial species used to produce lumber and other forest products, including Christmas trees.”

California Government Code – Timberland Production Zone

Chapter 6.7 of the Government Code regulates timberlands within the state. “Timberland production zone” is defined in Section 51104(g) as an area that has been zoned pursuant to Government Code Section 51112 or 51113 and is devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses. In this context, “compatible uses” include any use that “does not significantly detract from the use of the property for, or inhibit, growing and harvesting timber” (Gov. Code, section 51104(h)).

Fresno County

Fresno County General Plan (General Plan)

The Agriculture and Land Use Element of the Fresno County General Plan describes land use designations and development standards for unincorporated land within the County, and sets out goals, policies, and programs related to agriculture and land use. The General Plan land use designation covering the entire Plan Area is “Agriculture,” which provides for production of crops and livestock and for location of necessary agriculture commercial centers, agricultural processing facilities, and certain nonagricultural activities (Fresno County 2024b). The General Plan does not specifically mention utility-scale solar, energy storage, or any other form of renewable energy generation. The following General Plan policies and programs are applicable to the VCIP. Analysis of a typical VCIP project’s consistency with the General Plan’s Agriculture policies is presented in Section 4.11. *Land Use and Planning, under Impact LU-2.*

Agriculture and Land Use Element

A. Agriculture

Goal LU-A: To promote the long-term conservation of productive and potentially productive agricultural lands and to accommodate agricultural-support services and agriculturally-related activities that support the viability of agriculture and further the County’s economic development goals.

Policy LU-A.1 Agricultural Land Conservation. The County shall maintain agriculturally-designated areas for agriculture use and shall direct urban growth away from valuable agricultural lands to cities, unincorporated communities, and other areas planned for such development where public facilities and infrastructure are available or can be provided consistent with the adopted General or Community Plan.

Policy LU-A.2 Agriculture-related Uses. The County shall allow by right in areas designated Agriculture activities related to the production of food and fiber and support uses incidental and secondary to the on-site agricultural operation.

Policy LU-A.3 Special Agricultural Uses. The County may allow by discretionary permit in areas designated Agriculture, special agricultural uses and agriculturally-related activities, including value-

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added processing facilities, and certain non-agricultural uses. Approval of these and similar uses in areas designated Agriculture shall be subject to the following criteria:

- a. The use shall provide a needed service to the surrounding agricultural area which cannot be provided more efficiently within urban areas or which requires location in a non-urban area because of unusual site requirements or operational characteristics;
- b. The use should not be sited on productive agricultural lands if less productive land is available in the vicinity;
- c. The operational or physical characteristics of the use shall not have a detrimental impact on water resources or the use or management of surrounding properties within at least one-quarter (1/4) mile radius;
- d. A probable workforce should be located nearby or be readily available;

Criteria 'e' through 'h' relate to the approval of commercial centers, value-added agricultural processing facilities, churches, schools and existing commercial uses and are not applicable to VCIP development.

Policy LU-A.12 Agricultural Protection. In adopting land uses policies, regulations, and programs, the County shall seek to protect agricultural activities from encroachment of incompatible land uses.

Policy LU-A.13 Agricultural Buffers. The County shall protect agricultural operations from conflicts with nonagricultural uses by requiring buffers between proposed non-agricultural uses and adjacent agricultural operations. Additionally, the County shall consider buffers between agricultural uses and proposed sensitive receptors when processing discretionary land use applications.

Policy LU-A.14 Agricultural Land Conversion Review. The County shall ensure that the review of discretionary permits includes an assessment of the conversion of productive agricultural land and that mitigation be required where appropriate.

Policy LU-A.15 Right-to-Farm Notice. The County shall generally condition discretionary permits for development within or adjacent to agricultural areas upon the recording of a Right-to-Farm Notice, which is an acknowledgment that residents in the area should be prepared to accept the inconveniences and discomfort associated with normal farming activities and that an established agricultural operation shall not be considered a nuisance due to changes in the surrounding area.

Policy LU-A.23 Farmland Conversion. For discretionary land use projects that are not directly related to or supportive of agricultural uses and which propose the permanent conversion of twenty acres or more of Prime Farmland, Unique Farmland or Farmland of Statewide Importance (as designated by the Farmland Mapping and Monitoring Program) to nonagricultural uses, the County shall consider and adopt feasible measures including, but not limited to:

- Acquisition of conservation easements at a 1:1 ratio for lands lost to nonagricultural uses.
- Fee title of agricultural mitigation land that may be held by a third party or the County.
- In lieu fees paid to the County that may be used to acquire future mitigation property.
- Mitigation banks.

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The County may exempt projects from agricultural mitigation requirements when it has been determined that conversion is occurring pursuant to a local groundwater sustainability plan, or the project is for housing which is predominately for persons of low or moderate income as defined in section 50093 of the Health and Safety Code. Further, the County may exempt discretionary land use projects from agricultural mitigation requirements if it finds that the loss of agricultural land caused by the proposed conversion is outweighed by specific overriding economic, legal, social, technological, or other benefits of the conversion, as contemplated by section 21081(b) of the Public Resources Code (Fresno County 2024b).

Fresno County Zoning Ordinance

As shown on the Fresno County Zoning Map, almost the entire VCIP Plan Area and all land within the proposed DFAs are zoned “AE” Exclusive Agricultural District, which is further divided into acreage designations. Most of the Plan Area is within the AE-20 zone where the minimum parcel size is 20 acres, while lands at the southeastern and western margins of the Plan Area are within the AE-40 zone where the minimum parcel size is 40 acres. The only non-agriculturally-zoned lands are in two unincorporated communities, including Cantua Creek, which has a small area zoned “R1-Single Family Residential” and a small area zoned “TP-Trailer Park Residential,” and Three Rocks (El Porvenir), which has a small area zoned “R1-Single Family Residential.” In addition, Three Rocks/El Porvenir and the unincorporated community of Westside have small areas zoned “AC-Agricultural Commercial Center.”

Under Fresno County Zoning Ordinance section 842.5.020.B, photovoltaic (PV) solar facilities and other renewable energy projects, including energy storage and transmission facilities, are permitted through the County’s Unclassified Conditional Use Permit (UCUP) process subject to the County’s Solar Facility Guidelines (see below).

Fresno County Solar Facility Guidelines

The Solar Facility Guidelines adopted by the Fresno County Board of Supervisors on May 21, 2013, and revised on December 12, 2017, provide general guidelines and policies, as well as an outline for the process of evaluating solar facilities within Fresno County (Fresno County 2017). Analysis of a typical VCIP project’s consistency with all Solar Facility Guidelines is presented in Section 4.11. *Land Use and Planning, under Impact LU-2*. The Solar Facility Guidelines specific to agricultural resources require the following:

1. Information shall be submitted regarding the historical agricultural operational/usage of the parcel, including specific crop type and crop yield, for the last ten years (if no agricultural operation in the last ten years, specify when land was last in agricultural use).
2. Information shall be submitted that identifies the source of water for the subject parcel (surface water from irrigation district, individual well(s), conjunctive system). If the source of water is via district delivery, the applicant shall submit information documenting the allocations received from the irrigation district and the actual disposition of the water (i.e. utilized on-site or moved to other locations) for the last ten years. If an individual well system is used, provide production capacity of each well, water quality data and data regarding the existing water table depth.
3. Identify the current status of the parcel (Williamson Act Contract, Conservation Easement, retired land, etc.), the purpose of any easement and limitations of the parcel. The applicant shall submit a Title Report or Lot Book Guarantee for verification.

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4. Identify (with supporting data) the current soil type and mapping units of the parcel pursuant to the standards of the California State Department of Conservation and the Natural Resources Conservation Service.
5. List all proposed measures and improvements intended to create a buffer between the proposed solar facility and adjacent agricultural operations (detailed information must be shown on Site Plan) and provide factual/technical data supporting the effectiveness of said proposed buffering measures.
6. Provide a Reclamation Plan detailing the lease life, timeline for removal of the improvements and specific measures to return the site to the agricultural capability prior to installation of solar improvements. If the project is approved, adequate financial security to the satisfaction of the County shall be provided to ensure site reclamation.
7. Provide information documenting efforts to locate the proposed solar facility on non-agricultural lands and non-contracted parcels and detailed information explaining why the subject site was selected.
8. Develop and submit a project site Pest Management Plan to identify methods and frequency to manage weeds, insects, disease and vertebrate pests that may impact adjacent sites.
9. The applicant must acknowledge the County's Right to Farm Ordinance and shall be required to record a Right to Farm Notice prior to issuance of any permits. This shall be included as a recommended Condition of Approval of the land use entitlement.
10. Note: The life of the approved land use permit will expire upon expiration of the initial life of the solar lease. If the solar lease is to be extended, approval of a new land use permit will need to be obtained.

Fresno County Williamson Act Interim Program Guidelines and Procedures

In accordance with the requirements of Government Code section 51231, the Fresno County Board of Supervisors adopted Interim Guidelines and Procedures for the County's Williamson Act Program in 2004 (Fresno County Williamson Act Guidelines). Regarding land uses deemed to be compatible with Williamson Act contracts, the Fresno County Williamson Act Guidelines provide: "Pursuant to the Williamson Act, the use of enrolled lands and improvements shall be limited to commercial agricultural or uses determined to be compatible or incidental to commercial agriculture" (Fresno County 2004).

Fresno County Right-to-Farm Ordinance

Fresno County Code section 17.72.075(A) requires recordation with the Fresno County Recorder of a right-to-farm notice for certain activities within 300 feet of an AE Zone District, in substantially the following form:

FRESNO COUNTY RIGHT-TO-FARM NOTICE

It is the declared policy of Fresno County to preserve, protect, and encourage development of its agricultural land and industries for the production of food and other agricultural products. Residents of property in or near agricultural districts should be prepared to accept the inconveniences and discomfort associated with normal farm activities. Consistent with this policy, California Civil Code §3482.5 (right-to-farm law) provides that an agricultural pursuit, as defined, maintained for commercial uses shall not

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become a nuisance due to a changed condition in a locality after such agricultural pursuit has been in operation for three years.

In conformance with the Fresno County Solar Facility Guidelines, the Applicant would be required to record such a notice prior to the County's issuance of permits for VCIP projects.

Westlands Water District

The District's Rules and Regulations include several provisions regarding water supply for farmlands that are repurposed for a modified use such as solar generation facilities.

Rules and Regulations – Article 2 – Surface Water Allocation - Appendix A

This section of the District's Rules and Regulations applies to CVP contractual and legal entitlements and provides for the "temporary, albeit long-term, modification" of "Eligible Cropland" (i.e., eligible to receive surface water deliveries) to a non-irrigable use (e.g., solar generation facility) if a conditional use permit is obtained for such use, and the term of the land use is limited by the permitting agency and by a lease or easement on the land, and that upon cessation of such use, the facility will be decommissioned and returned to a condition suitable for agricultural use, as guaranteed through the posting of a performance bond or other financial assurance. These provisions allow for the DFA lands to retain their eligibility for CVP allocation subject to the condition that the subject lands will remain suitable for agricultural use after the solar and related facilities are removed from the lands.

Rules and Regulations – Article 1 – Groundwater Allocation

Subject to annual groundwater allocations as determined by the District under the Groundwater Sustainability Plan (GSP), and other conditions set forth in Article 1, landowners may transfer groundwater to other Eligible Land within the District. The definition of "Eligible Land" corresponds closely with "Eligible Cropland" for surface water deliveries under Article 2, and thus most VCIP solar and energy storage projects would be eligible for groundwater supplies. In 2030 and subsequent years, the annual groundwater allocation will be limited to 0.6 acre-feet per acre per year, which reflects the long-term sustainable yield within the Westside Subbasin.

AB 2661 – VCIP

As described above, AB 2661 authorizes the District to construct, operate, and maintain solar generation facilities, energy storage systems, and electrical transmission lines within its boundaries. The bill requires the District to establish a community benefits agreement plan for the Valley Clean Infrastructure Plan and related projects (Water Code, sections 37860-37861). AB 2661 recognizes "the unique need of the Westlands Water District to support the development of solar electrical generation for the electrical grid and to facilitate the development of transmission capacity to help California reach its clean energy and climate goals." Pursuant to AB2661, the District is considering the proposed VCIP as the policy and planning framework for incremental repurposing and management of drainage-impaired and other private and District-owned lands within the District's boundaries, which would be expected to occur through proposals by GSCE to develop clean energy generation, storage, transmission, and other ancillary and supportive uses.

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4.2.2.2. VCIP INFRASTRUCTURE PLAN

Fresno County

Fresno County General Plan

All elements of the VCIP Infrastructure Plan (substations, gen-tie lines, internal transmission lines) would be in Fresno County. All lands that would be occupied by the collector substations and traversed by the gen-tie lines and connector transmission lines are designated Agriculture in the Fresno County General Plan. The General Plan does not specifically mention electrical utility infrastructure (Fresno County 2024b).

Fresno County Zoning Ordinance

Under chapter 808.2 of the Fresno County Zoning Ordinance, “public utility facilities” are allowable uses in the Agricultural zones subject to a Conditional Use Permit. Under Section 842.5.020(B), “public utility and public services, structures, and uses” are allowed subject to an Unclassified Conditional Use Permit (Fresno County 2024a).

4.2.2.3. TRANSMISSION CORRIDORS OUTSIDE THE VCIP PLAN AREA

Agricultural Resources

Agricultural Zoning. The delivery transmission lines would pass through the unincorporated areas of 10 counties to the north, west, and south of the Plan Area. In each of these counties, the transmission lines would traverse lands zoned for Agriculture. Depending on the county, the zoning ordinances allow utility facilities either as permitted uses, conditionally permitted uses subject to Planning Commission approval, or permitted subject to administrative approval or Planning Commission review (Alameda Co. 2025a; Fresno Co. 2024i; Kern County 2025a; Kings County 2025b; LA County 2025a; Merced Co. 2025a; Monterey Co. 2025; San Benito Co. 2025a; San Joaquin Co. 2025a; Stanislaus Co. 2023).

Williamson Act. The outside transmission segments traversing the San Joaquin Valley would pass through substantial areas of contracted land. The northern transmission lines would leave the valley floor in the vicinity of the Dos Amigos Pumping Plant and follow the lower slopes of the Diablo Range northward where few lands are under Williamson Act contract. The western transmission line to Moss Landing would leave the valley floor west of I-5, traverse the Coast Ranges and pass through two small valleys with Williamson Act contracts. The southern transmission lines would leave the valley floor southeast of Bakersfield, passing over the Tehachapi Range and crossing the Antelope Valley where few lands are under Williamson Act contract.

Forestry Resources

The transmission corridors assumed in this PEIR would not pass through any lands which are zoned forest land, timberland, or Timberland Production under the applicable statutes. In addition, there are no National or State Forests in the vicinity of the delivery transmission corridors.

The northern transmission lines pass through the counties of Fresno, Merced, Stanislaus, and San Joaquin, and would terminate at the Tesla and Tracy Substations in Alameda County. In these counties, the transmission route would pass through lands zoned Agriculture. Timber harvesting is not a permitted use in Agricultural zones

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in any of the affected counties (Fresno Co. 2025a; Merced Co. 2025a; Stanislaus Co. 2023; San Joaquin Co. 2025a; Alameda Co. 2025a).

The western transmission route passes through the unincorporated areas of western Fresno County and San Benito County, and would terminate at the Moss Landing Substation in Monterey County. In San Benito County, the transmission route passes entirely through lands zoned “Agricultural Rangeland (AR)” where timber harvesting is not listed as a permitted or prohibited use. However, timber harvesting is included in the definition of “Agricultural Operations” which are protected under Section 19.01.001 of the San Benito County Code (San Benito Co. 2025a). In Monterey County, timber harvesting is permitted in the unincorporated areas subject to a timber harvesting plan submitted pursuant to the Zberg-Nejedly Forest Practices Act of 1973 (Monterey Co. 2025).

The southern transmission corridor passes through the unincorporated areas of the Counties of Fresno, Kings, Kern and Los Angeles, and the Cities of Lancaster and Palmdale in Los Angeles County. In the unincorporated county areas, the southern transmission corridor passes through lands zoned Agriculture (Fresno County 2025b; Kings County 2025a; Kern County 2025b; LA County 2025b). Under the Kern County Zoning Ordinance, permitted uses in Agricultural zones include the growing and harvesting of timber (Kern County 2025a). However, as discussed below, the transmission route through the Tehachapi Mountains passes exclusively through oak woodlands which are protected under the Kern County General Plan Land Use, Open Space, and Conservation Element – Policy 65, in conformance with the state’s oak woodland protection requirements under Public Resources Code section 21083.4 (Oak Tree Preservation)(Kern County 2009). In northern Los Angeles County, the transmission route passes exclusively through lands zoned A-2, where timber logging is permitted subject to Site Plan Review (LA County, 2025a, 2025b). Los Angeles County’s Antelope Valley Area Plan Policy COS 16.1 states that new development shall: “minimize removal of native vegetation” and “ensure that a large percentage of the land is left in its natural state.” Timber harvesting is not a permitted use under the Antelope Valley Area Plan (LA County 2015). In the City of Lancaster, the transmission route passes exclusively through lands zoned Rural Residential (Lancaster 2025). In the City of Palmdale, the transmission route partially passes through lands zoned Single-Family Residential, and in the City’s Ritter Ranch and Anaverde Nuevo Specific Plan areas it passes through lands designated/zoned Open Space (Palmdale 1992, 2021, 2025). Timber harvesting is not permitted in any of these land use plans or zoning designations.

4.2.3. Environmental Impact Analysis

This section analyzes the potential for VCIP implementation to result in significant environmental impacts related to agricultural and forestry resources. When an impact is determined to be significant, mitigation measures are identified that would reduce or avoid the impact.

METHODOLOGY

Evaluation of potential project impacts on agricultural resources was based on a review of applicable policies, maps, plans, and reports pertaining to the proposed VCIP, which include, without limitation: the Fresno County General Plan and General Plan Background Reports; NRCS’s Soil Survey and mapping for Fresno County; Important Farmland Mapping by the California Department of Conservation’s Farmland Mapping and Monitoring Program (FMMP); mapping of lands enrolled in the state’s Williamson Act Program; and data and reports prepared by the District. To assess potential impacts on forest resources, the analysis considered site {00081343.1}

zoning, site-specific environmental characteristics, forest inventory maps prepared by government agencies, and applicable definitions set forth in state law.

SIGNIFICANCE CRITERIA

Based on Appendix G of the state CEQA Guidelines, the project would be considered to have a significant impact related to agriculture and forestry 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.
- b. Conflict with existing zoning for agricultural use, or a Williamson Act contract.
- c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g)).
- d. Result in the loss of 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 Farmland to non-agricultural use, or conversion of forest land to non-forest use.

4.2.3.1. DIRECT AND INDIRECT EFFECTS

Valley Clean Infrastructure Plan

Impact AG-1. Agricultural Land Conversion

VCIP Energy Resources Plan. The solar and energy storage facilities developed on “Farmland” would not alter the physical and chemical properties of the affected agricultural soils, and upon decommissioning the soils would be restored to a condition suitable for agricultural uses. The temporary, albeit long-term, modification of the land for renewable energy facilities would not affect the long-term suitability of the soils for agricultural use. As discussed in the analysis below, implementation of the VCIP Energy Resources Plan would not result in the permanent conversion of “Farmland” and proposed renewable energy facilities thus would not be expected to result in a significant impact related to agricultural resources at the project level. Nevertheless, in light of the scope and duration of the long-term temporary modification of the Plan Area for renewable energy facilities and the need for project-level details (e.g., whether the proposed project includes sheep grazing or other ongoing agricultural activities) and site-specific information to assess the appropriateness and feasibility of mitigation measures (e.g., Fresno County General Plan Policy LU-A.23), this impact is conservatively considered *significant and unavoidable* at the plan level. (*Significant Unavoidable Impact*)

VCIP Gen-Tie and Connecting Transmission Lines. The VCIP gen-tie lines and connector transmission lines would result in the permanent loss of “Farmland” on a series of very small parcels occupied by the tower {00081343.1}

footings, which would be dispersed over the length of the corridors and would involve removal of a total of approximately 47 acres of “Farmland” throughout the total 339-mile length of the corridors. As discussed in the analysis below, the loss of this small aggregate acreage of dispersed Farmland is considered insubstantial within the overall farming units and would not represent a significant impact related to agricultural resources. (*Less-than-Significant Impact*)

VCIP Collection Substation No. 5. VCIP Substation No. 5 would involve the permanent conversion of approximately 60 acres of contiguous Farmland, which would represent a significant impact related to agricultural resources. (*Significant Unavoidable Impact*)

VCIP Energy Resource Plan – Analysis of Impact AG-1

As discussed in Section 4.2.1 *Environmental Setting*, the California Department of Conservation’s (CDOC) FMMP map “Important Farmland Fresno County 2020” classifies approximately 83 percent of the Plan Area as “Prime Farmland,” “Farmland of Statewide Importance,” or “Unique Farmland,” all of which comprise “Farmland” under CEQA Guidelines Appendix G. Table 4.2-1 includes a breakdown of acreages for each FMMP category within the Plan Area, as well as acreages of various farmland categories within the VCIP Development Focus Areas (DFAs).

The DFAs cover approximately 136,000 acres, or about 25.5 percent of the Plan Area. As shown in Table 4.2-1, about 28 percent of the DFA lands are Prime Farmland, approximately 24 percent are Farmland of Statewide Importance, and less than 1 percent are Unique Farmland. Taken together, these lands constitute “Farmland” under CEQA, and have a combined total of approximately 71,000 acres, or 52 percent of the DFA total acreage. The remaining 65,000 acres, or 48 percent of DFA lands, are classified as Farmland of Local Importance which is not included in the definition of Farmland under CEQA. In the following analysis, the “Non-Farmland” is addressed first, followed by the analysis of “Farmlands.”

**TABLE 4.2-1
FARMLAND CATEGORIES IN VCIP PLAN AREA AND DFAS**

	Farmland ('000 Acres)			Non-Farmland		('000 Acres)
	Prime Farmland	Farmland of Statewide Importance	Unique Farmland	Farmland of Local Importance	Other Land Uses	
VCIP Plan Area	286.1	156.1	1.4	78.3	13.1	535.0
Percent of VCIP Area	53.5%	29.2%	0.2%	14.6%	2.5%	
DFAs	37.5	31.7	0.2	66.8	0	136.0
Percent of DFA Lands	27.6%	23.3%	0.01%	49.1%	0%	

Source: CDOC 2023a

Non-Farmland

Approximately 67,000 acres of DFA lands, or 49 percent of the DFA total acreage, is classified as Farmland of Local Importance which is not included in the definition of Farmland under CEQA. As discussed in Section 4.2.1 *Environmental Setting* above, most of these lands were acquired by the District via a drainage settlement because of their drainage impairment due to perched groundwater and saline soil conditions, or acquired for

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water supply. The District discontinued surface water deliveries to these lands and also discontinued groundwater pumping on these lands. Conversion of lands mapped as Farmland of Local Importance under FMMP to non-agricultural uses is not considered a significant impact under CEQA.

Farmland

The DFA lands classified by the FMMP as “Farmlands” include Prime Farmland (about 28 percent of the DFA lands), Farmland of Statewide Importance (approximately 23 percent of DFA lands), and Unique Farmlands (less than 1 percent of DFA lands). Under the CDOC’s mapping criteria, these farmland classifications are based on physical and chemical soil properties as informed by NRCS soil survey data (CDOC 2004).

While the 23 percent of DFA lands classified as Farmland of Statewide Importance are included in the CEQA definition of Farmland, the lands so classified within the Plan Area largely consist of clay soils with elevated salinity and poor subsurface drainage. The main soil types covering this area – Ciervo, Tranquillity, and Lethent clay – are all classified by NRCS as Class 3 soils which have “severe limitations that reduce the choice of plants or require special conservation practices, or both.” Without irrigation, these soils are classified as Class 7 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” (NRSC 2006). In addition, almost all of these lands were classified as “drainage impaired” in USBR’s San Luis Drainage Feature Re-evaluation EIS/EIR, and were identified as lands to be considered for retirement from irrigated agriculture (USBR 2006). Thus, while these lands are considered Farmland under CEQA, their agricultural productivity is substantially less than Prime Farmland. When all DFA lands that are subject to some degree of impairment are combined (e.g., Farmlands of Local Importance and Farmlands of Statewide Importance) the total acreage of impaired farmlands is approximately 98,500 acres, or 73.5 percent of the total DFA land area.

The VCIP solar and energy storage facilities would take the DFA lands out of agricultural production for 35 years, which reflects the predicted useful life of these facilities. In Fresno County, where the proposed VCIP is located, solar operators are required to prepare and submit a Reclamation Plan prior to the issuance of building permits, and to implement the County-approved Reclamation Plan upon decommissioning of their solar and energy storage facilities, as required by the County’s Solar Facility Guidelines. The Reclamation Plan is required to specify the termination date of the solar use and the timeline for removal of all above-grade and below-grade improvements, and to detail the specific measures to reclaim the site to its previous agricultural condition including types of crops to be planted. The Reclamation Plan is to include an engineering cost estimate for reclaiming the site to its previous agricultural condition. Implementation of the Reclamation Plans is guaranteed by the posting of performance bonds or other forms of financial surety. The conditional use permits issued by the County for solar and energy storage projects expire upon termination of the initial life of the solar lease (i.e., 35 years under the proposed VCIP), and new land use permits are required if the solar use is proposed to be extended (Fresno County 2025c). This reflects the County’s objective that the solar and energy storage uses will be temporary, albeit long term, in nature. The long-term temporary duration of the solar use is also reflected in the type of land transactions that would be required with participating private landowners in the VCIP. Instead of having the solar developers purchase the privately owned land in fee simple, the DFA lands would be subject to leases or easements for solar use, whereby upon decommissioning of the solar facilities, with all land rights reverting to the underlying landowner. Modification of these agricultural lands for solar and related facilities represents a management decision for certain agricultural lands within the overall farming unit(s). The farming unit remains intact because the management or following decision is temporary within the overall ongoing agricultural use.

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Recognition that the solar and energy storage facilities will be agriculturally compatible and temporary, albeit long-term in nature is further reflected in the District's Rules and Regulations Article 2, Appendix A which provide that privately owned agricultural lands modified to a non-irrigable use may retain their eligibility for water supply (i.e., for transfer to other agricultural lands in the District) subject to specified conditions, including a requirement that the subject lands either retain their existing agricultural character during the operational life of the project, or, upon cessation of project uses, will be returned to a condition suitable for agricultural uses. Article 2, Appendix A also requires decommissioning plans and financial assurances of reclamation upon termination of the modified use. Thus, both the District and the County have established mechanisms and measures to ensure that the modified use of agricultural lands is not permanent.

Construction of the solar and energy storage facilities would involve minimal grading, with 90 percent of each solar site occupied by elevated solar arrays and the ground beneath maintained in vegetative cover. The risk of soil contamination during construction and operation of solar and energy storage facilities would be minimized through implementation of the hazardous materials provisions of the required Storm Water Pollution Prevention Plans (SWPPPs) and Hazardous Materials Business Plans (HMMPs). Also, implementation of the County-approved Pest Management Plans during operation and maintenance of the facilities would prevent the emergence and spread of weeds while minimizing the use of herbicides and pesticides. Decommissioning would involve the removal of all structural elements of the facilities, including concrete pads and foundations, and surface material for internal driveways. The required implementation of SWPPPs during decommissioning would minimize the risk of soil contamination during that final project phase. After the structural elements of a facility have been removed, the limited areas subject to excavation for foundations would be refilled with native soils, and areas subject to compaction for internal driveways would be mixed and loosened. The entire site would be tilled to restore the pre-project agricultural soil texture and density. The physical and chemical properties of the soil would be preserved during the operating lives of the solar and energy storage facilities, and post-project reclamation would ensure that the site soils are restored to a condition suitable for agricultural use.

The repurposing of agricultural land for solar and related uses for a limited period of time under the VCIP would not result in the permanent or temporary loss of Farmland. Under baseline conditions, restrictions on availability of irrigation water supply have necessitated the fallowing of an average of 189,640 acres of land per year in the District over the last ten years (i.e., 53,640 *more* acres than that total DFAs (136,000 acres) are fallowed each year, on average). Thus, under baseline conditions it is not feasible to irrigate all Farmland within the Plan Area each year. At the same time, the viability of agricultural operations on some Farmland would be substantially lost if fallowed. For example, approximately forty-five percent (45%) of the cultivated acreage within the District consists of tree crops (158,031 acres) and grapes (12,236 acres) that require irrigation each year. Sustained production of certain row crops may also become infeasible due to the economic and practical effects of fallowing on a farming operation. This tension between the irrigation required to sustain agriculture on Farmland within the District and the inability to irrigate all Farmland creates a present need to redirect scarce water resources to the productive agricultural lands with the most pressing needs. Crucially, this background level of fallowing (i.e., unrelated to the proposed VCIP) is expected to increase, as restrictions on water supply are expected to worsen over the short-and-long term as limitations on groundwater pumping take full effect under SGMA and due to climate change. Due to these background changes, it will not be feasible to irrigate additional Farmland, and additional trade-offs will have to be made to maintain agricultural viability.

In light of these existing conditions, characterized by reduced water supply reliability and increased mass fallowing of Farmland, the District's water supply objectives for the proposed VCIP are to enable the effective

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implementation of the GSP while maintaining the viability of agricultural operations by providing for temporary modification of agricultural lands. The VCIP is intended to address the chronic shortage of CVP contract water deliveries by promoting repurposing of farmland to facilitate the redirection of scarce allocations of this CVP contract water to other productive land within the District. Under Article 1 and Article 2, Appendix A of the District's Rules and Regulations, the surface and groundwater allocations applicable to the modified agricultural lands are permitted to be transferred to the portions of the farming units to be retained in agricultural production, thereby enhancing the productivity and viability of the larger farming units.³ A related objective of the VCIP is to provide utility-scale power generation on farmland that has been fallowed or removed from irrigated agriculture due to lack of a reliable surface water supply, which reduces pressure to develop renewable energy on prime agricultural land elsewhere. The temporary repurposing of agricultural land under the VCIP, alongside the transfer of water from modified lands to other productive agricultural lands would create an orderly framework for significant fallowing that will invariably occur. The VCIP's coordinated approach would avoid haphazard fallowing decisions, help reduce overall fallowing acreage, and minimize the amount of land that would be economically unproductive in the absence of the VCIP. Rather than the proximate cause of fallowing, the proposed VCIP is an adaptive approach that would contribute to the solution of how to manage reduced water supply reliability and the substantial amount of fallowing that must occur in any given year. In sum, the District's objective is to maintain the viability of the farming units through temporary repurposing of farmland which would be subject to long-term fallowing in any event. For these reasons, implementation of the VCIP would ultimately be environmentally beneficial and protective of agricultural resources within the Plan Area.

An objective of the proposed VCIP is also to ensure financing of decommissioning and site reclamation at the end of each project's life to restore each site to conditions suitable for agricultural use. This objective would enable the return of the entire farming units to agricultural production in the future. As such, it is imperative that the physical properties of the soils on the temporarily repurposed lands are preserved to conserve the agricultural capability of those lands. Through implementation of a Vegetation and Soils Management Plan (VSMP)(identified in MM AG-1 below) and a Reclamation Plan at each potential project site, the solar and related uses of the repurposed lands would provide for the effective stewardship of their agricultural capability during the interim period when the lands are put to alternative productive use. As such, while the repurposed lands would temporarily be taken out of agricultural production, the lands would not be temporarily converted to non-farmland. Instead, these lands would be managed to maintain their agricultural capability and to prevent their permanent conversion to non-agricultural use. While the implementation of VCIP solar and related projects would result in the temporary use of farmland for the production of renewable energy, it would also fulfill the basic objectives of the District of effectively implementing the GSP while managing the land to preserve its long-term agricultural capability. The temporary repurposing of any Farmland would also ensure its long-term conservation for the future resumption of agricultural production, and the temporary solar land use would preserve the agricultural capability of the soil. Therefore, while the repurposing of the land would temporarily remove it from agricultural production, it would not commit the land to permanent conversion to non-agricultural uses. In fact, the VCIP would accomplish the opposite by committing the land to be preserved for future resumption of agricultural uses. Therefore, the proposed renewable energy facilities would not be expected to result in a significant impact related to agricultural resources at the project level. Nevertheless, in light of the scope and duration of the long-term temporary modification of the Plan Area for renewable energy facilities and the need for project-level details (e.g., whether the proposed project includes sheep grazing or other ongoing agricultural activities) and site-specific information to assess the

³ It is anticipated that the VCIP would be implemented in coordination with additional agricultural land repurposing projects pursuant to the GSP. As provided in the GSP, collectively these groundwater sustainability initiatives would promote reduced groundwater demand while supporting the local economy through clean energy development.
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appropriateness and feasibility of mitigation measures (e.g., Fresno County General Plan Policy LU-A.23), this impact is conservatively considered *significant and unavoidable* at the plan level.

In this context, it is important to note that under General Plan Land Use Policy LU-A.23 Farmland Conversion, “the County may exempt projects from agricultural mitigation requirements when it has been determined that conversion is occurring pursuant to a local groundwater sustainability plan.” Policy LU-A.23 further provides that “the County may exempt discretionary land use projects from agricultural mitigation requirements if it finds that the loss of agricultural land caused by the proposed conversion is outweighed by specific overriding economic, legal, social, technological, or other benefits of the conversion, as contemplated by section 21081(b) of the Public Resources Code.” This policy recognizes that potential impacts to agricultural lands should be balanced against the substantial benefits associated with promoting groundwater sustainability pursuant to a GSP and any other potentially overriding benefits associated with a project. Application of the exemption is a policy matter to be determined at the project level and cannot be assessed in this PEIR.

This impact analysis explains that VCIP implementation would not be expected to result in a temporary or permanent conversion of Farmland at the project level and instead represents a coordinated and adaptive approach to protect agricultural resources despite existing conditions of water shortage and widespread fallowing. The GSP expressly identifies the VCIP as a potential “Agricultural Land Repurposing” project that would implement the GSP. Additionally, as recognized by the Legislature in enacting AB 2661, the District, due to its location, topography, and excellent insolation (solar radiation energy), has unique potential to “support the development of solar electrical generation for the electrical grid and to facilitate the development of transmission capacity to help California reach its clean energy goals.” Through temporary repurposing, the VCIP would generate up to 21,000 MW of clean energy per year that would replace fossil-based generation. Implementation of the VCIP would also provide significant community benefits and related economic and social benefits. As such, implementation of the VCIP would provide substantial and unique environmental, social, and economic benefits that should also receive significant weight in any balancing.

In summary, construction and operation of the VCIP solar and energy storage facilities would not be expected to adversely affect any of the physical and environmental characteristics of the project sites that qualify them for mapping as Prime Farmland, Farmland of Statewide Importance, or Unique Farmland under CDOC’s Farmland Mapping and Monitoring Program. While the long-term temporary repurposing of Farmland may contribute to the temporary remapping of these lands by FMMP to a Non-Farmland, once these lands are returned to agricultural use upon decommissioning and reclamation, these lands would be remapped as Farmland by FMMP.⁴ Given that the solar and energy storage projects would have an expected life of 35 years and would not alter the physical and chemical properties of the agricultural soils, and further would be subject to requirements ensuring that the existing physical character of the soil will be retained during the operational life of the project and, upon cessation of project uses, the land will be restored to a condition suitable for agricultural uses, these facilities would not affect the long-term suitability of their sites for agricultural use. Therefore, implementation of the VCIP Energy Resources Plan would not be expected to result in the permanent conversion of “Farmland” to non-agricultural uses at the project level. In light of the scope and duration of the long-term temporary modification of the Plan Area for renewable energy facilities and the need for project-level details (e.g., whether the proposed project includes sheep grazing or other ongoing

⁴ Under existing conditions, it is not feasible to irrigate and cultivate all Farmland within the DFAs and the Plan Area. Background effects such as SGMA implementation and climate change will exacerbate the existing chronic shortage of water supply and further reduce water supply reliability. Therefore, to the extent any Farmland is remapped due to extended fallowing, these existing conditions and known trends suggest this fallowing would likely occur without implementation of the VCIP.

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agricultural activities) and site-specific information to assess the appropriateness and feasibility of mitigation measures (e.g., Fresno County General Plan Policy LU-A.23), this impact is conservatively considered *significant and unavoidable* at the plan level.

VCIP Infrastructure Plan – Analysis of Impact AG-1

Implementation of the VCIP Infrastructure Plan would involve use of agricultural land for the siting of VCIP collector substations, gen-tie lines, and VCIP connector transmission lines. Each of these infrastructure elements is discussed in turn below.

VCIP Substations

Each of the five VCIP collection substations would be constructed on a site of up to 60 acres. The Infrastructure Plan shows that four of these substations would be located on lands classified “Farmlands of Local Importance” (i.e., Non-Farmland) and one substation site (Substation 5) as “Farmlands of Statewide Importance” (i.e., Farmland) as mapped by FMMP. Thus, the substations would overall occupy up to 60 acres of Farmland (Substation 5) and 240 acres of Non-Farmland (remaining four substations). Four of the five substation locations are under the District’s ownership. The location of Substation 5 is currently in private ownership but is anticipated to be acquired by the District, because like the other four substation sites, the planned substation would be considered permanent and likely would not be decommissioned. Therefore, the construction of Substation 5 would constitute a permanent conversion of Farmland to non-agricultural uses. This would represent a *significant impact* related to agricultural resources.

Fresno County General Plan Policy LU-A.23 requires mitigation for discretionary land projects that are not directly related to or supportive of agricultural uses and which propose the permanent conversion of 20 acres or more of Prime Farmland, Unique Farmland or Farmland of Statewide Importance to nonagricultural uses. Such mitigation would include the acquisition of conservation easements, mitigation land, fee-in-lieu, or mitigation banking. As mentioned above however, under this policy the County may exempt projects from agricultural mitigation when (1) it has been determined that conversion is occurring pursuant to a local groundwater sustainability plan; or (2) if the County finds that the loss of agricultural land caused by the proposed conversion is outweighed by specific overriding economic, legal, social, technological, or other benefits of the conversion. The construction of Substation 5 is an integral element of the VCIP Infrastructure Plan, which is intended to facilitate repurposing of certain farmlands in the District in furtherance of the GSP. Additionally, as demonstrated above, by generating up to 21,000 MW per year in furtherance of the state’s renewable energy and climate goals while providing community benefits, implementation of the VCIP would provide substantial and unique environmental, social, and economic benefits that substantially outweigh the loss of 60 acres. As such, based upon this substantial evidence, the conversion of up to 60 acres of Farmland for the construction of VCIP Substation 5 may not require mitigation under Fresno County General Plan Policy LU-A.23.

VCIP Gen-Tie Lines

The VCIP gen-tie corridors would extend from the collector substations, with a total estimated length of up to 260 miles. Although the alignments of the gen-tie lines have not been determined, it is reasonable to assume that they would traverse Farmlands and Non-Farmlands in approximately the same proportions as they are present in the DFAs (i.e., 51% Farmland and 49% Non-Farmland). However, the DFAs on Farmlands are more geographically dispersed in the western and central areas of the Plan Area compared to Non-Farmlands which are more concentrated along the eastern margins of the Plan Area and in closer proximity to the collection substations. This indicates that relatively longer gen-tie lines would be needed to serve the western DFAs, and that these gen-tie lines would mainly traverse Farmlands (“Prime Farmland” and “Farmland of Statewide

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Importance”). This difference is somewhat offset by the fact that the eastern DFAs would require a greater density of gen-tie lines to serve the higher concentration of generating facilities. On balance, it is estimated that approximately 60 percent (or 156 miles) of the gen-tie lines would pass through Farmlands, and about 40 percent (or 104 miles) of the gen-tie lines would traverse Non-Farmlands. As shown in Table 4.2-2, the construction of the gen-tie lines would result in the temporary disturbance of 928 acres of Farmland, due to construction activity at the tower installation sites, the pulling and tensioning sites, and the equipment staging sites. Upon completion of gen-tie construction, most of these lands would be restored and returned to agricultural use.

TABLE 4.2-2
VCIP GEN-TIE LINES – FARMLAND DISTURBANCE ESTIMATES

Gen-Tie Project Feature	Quantities		Farmland*	Disturbance (Acres)	
	Total Gen-Ties ¹	Farmland* Only		Temporarily Disturbed/ To be Restored	Disturbed for Long-Term
Tower Sites	2,000 ²	1,200	240 ³	216	24 ⁴
Pulling/Tensioning Sites	260 ⁵	156	624 ⁶	624	0
Staging/Material Storage Sites	26	16	64	64	0
Totals	--		928 ac.	904 ac.	24 ac.

Footnotes:

¹ Total length of gen-tie corridor within VCIP is estimated to be up to 260 miles.

² Monopoles spaced as close as 800 feet apart; or 6.6 towers per mile, plus one extra monopole per mile for turning and crossing points.

³ Temporary disturbance area at each monopole site = up to 0.2 acres (8,100 sf), i.e., temporary clear areas = up to 90 X 90 feet.

⁴ Long-term disturbance area at each monopole site = 0.02 acres (900 sf), i.e., permanent clear areas = 30 X 30 feet.

⁵ Pulling/Tensioning sites are one mile apart.

⁶ Pulling/Tensioning sites estimated to disturb an average of 4 acres each.

⁷ One staging site per 10 miles of corridor over 260 corridor miles. Each staging site is 4 acres.

* As mapped by the Department of Conservation, Farmland Monitoring and Mapping Program in 2020 (CDOC 2023a).

“Farmland” includes Prime Farmland, Farmland of Statewide Importance, and Unique Farmland. Farmland of Local Importance is not included in the definition of “Farmland” per CEQA Guidelines Appendix G).

Source: CDOC 2023a

The gen-tie monopoles would each occupy 0.02 acre, and would result in the total long-term use of 24 acres at the 1,200 dispersed tower sites located on Farmland. The conversion of many small tower sites dispersed over approximately 156 miles of Farmland would represent a *less-than-significant impact* related to agricultural resources.

As described in Section 2.5.2.1.4. *Decommissioning and Reclamation of Gen-Tie Lines*, the VCIP gen-tie lines would be decommissioned at the end of their useful lives unless they are needed for another purpose as determined by the gen-tie owner and approved by the governing agency. It is unknown whether any gen-tie lines would be retained for future use. Therefore, for purposes of this analysis, it assumed that the gen-tie lines would remain in place and result in permanent conversion of 24 acres of Farmland in aggregate over 1,200 dispersed tower sites. As discussed above, this impact related to agricultural resources would be *less than significant*.

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VCIP Connector Transmission Lines

The VCIP connector transmission lines within the Plan Area would have a total length of approximately 79 miles, of which about 25 miles (or 32 percent) would pass through Farmlands composed of “Prime Farmland,” and “Farmland of Statewide Importance.” As shown in Table 4.2-2 on the next page, the construction of the connector transmission lines would result in temporary disturbance of approximately 340 acres of Farmland for tower construction sites, pulling and tensioning sites, and staging areas. Upon completion of transmission line construction, most of these lands would be restored to their pre-project condition. Over the long term, the monopoles would each occupy 0.1 acre, resulting in the total long-term use of 23 acres at the 231 tower sites located on Farmland.

TABLE 4.2-2
VCIP CONNECTOR TRANSMISSION LINES – FARMLAND DISTURBANCE ESTIMATES¹

Transmission Project Feature	Quantities		Farmland*	Disturbance	(Acres)
	Total T-Line	Farmland* Only	Total Disturbance Area	Temporarily Disturbed/ To be Restored	Disturbed for Long-Term
Tower Sites	759 ²	241 ³	231 ⁴	208	23 ⁵
Pulling/Tensioning Sites	69 ⁶	21 ⁶	84 ⁷	84	0
Staging/Material Storage Sites	8 ⁸	3 ⁸	15 ⁸	15	0
Totals	--		340 ac.	316 ac.	23 ac.

Footnotes:

¹ Total length of transmission line (59 miles X 2 lines) + (20 miles X 1 line) = 138 line miles, of which 42 line miles are in Farmland.

² Approx. 5 monopoles per line mile = 690 monopoles + 69 extra poles (10% of at turning and crossing points = 759 total monopoles.

³ From Footnote 1: 42 line miles in Farmland X 5 poles per mile = 210 towers + 21 extra towers = 231 towers in Farmland.

⁴ Temporary disturbance area at each monopole site = up to 1.0 acre, i.e., temporary clear areas = up to 210 X 210 feet.

⁵ Long-term disturbance area at each monopole site = 0.1 acre, i.e., permanent clear areas = 65 X 65 feet.

⁶ Pulling/Tensioning sites are two miles apart. (138 line miles / 1 site per 2 miles = 69 sites total; Farmland = 42 line miles / 2 = 21 sites)

⁷ Pulling/Tensioning sites estimated to disturb an average of 4 acres at each site.

⁸ One staging site per 10 miles of corridor over 79 corridor miles (25 corridor miles in Farmland). Each staging site is 5 acres.

* As mapped by the Department of Conservation, Farmland Monitoring and Mapping Program in 2020 (CDOC 2023a).

“Farmland” includes Prime Farmland, Farmland of Statewide Importance, and Unique Farmland. Farmland of Local Importance is not included in the definition of “Farmland” per CEQA Guidelines Appendix G).

Source: CDOC 2023a

As discussed in Section 2.5.2.3, it is assumed that the VCIP connector transmission lines would not be decommissioned. The permanent conversion of many small transmission tower sites on a total of 23 acres dispersed over approximately 25 miles of Farmland would represent a *less-than-significant impact* related to agricultural resources.

Overall Impact of VCIP upon Farmland

At the end of the useful lives of the VCIP solar and energy storage facilities, those facilities would be decommissioned as discussed above. The overall decommissioning process would take place gradually over several years, reflecting the phased sequence of original facility construction. The construction, operation, and

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decommissioning of the VCIP solar and energy storage facilities would not adversely affect any of the physical and environmental characteristics of the facility sites that qualify them for mapping as Prime Farmland, Farmland of Statewide Importance, or Unique Farmland under CDOC's Farmland Mapping and Monitoring Program. Therefore, these facilities would not affect the long-term suitability of their sites for agricultural use, and their impact upon agricultural resources would not be expected to be significant at the project level. In light of the scope and duration of the long-term temporary modification of the Plan Area for renewable energy facilities and the need for project-level details (e.g., whether the proposed project includes sheep grazing or other ongoing agricultural activities) and site-specific information to assess the appropriateness and feasibility of mitigation measures (e.g., Fresno County General Plan Policy LU-A.23), this impact is conservatively considered *significant and unavoidable* at the plan level.

As discussed above, it is assumed that the VCIP collection substations, gen-tie lines, and connector transmission lines would not be decommissioned after decommissioning of the VCIP energy generation and storage facilities. The gen-tie lines would result in the conversion of approximately 24 acres of Farmland at 1,200 dispersed tower sites over 156 miles, with each site occupying 0.02 acre. The connecting transmission lines would result in the conversion of 23 acres of Farmland, all of which would be dispersed over numerous 0.1 acre sites over a total distance of about 181 miles. The total permanent conversion of 47 dispersed acres of Farmland is considered insubstantial within the overall farming units and would represent a *less-than-significant impact* related to agricultural resources.

The construction of VCIP Substation 5 at its proposed location would result in the conversion of up to 60 contiguous acres of Farmland. This would represent a *significant impact* related to agricultural resources.

Mitigation Measures:

VCIP Energy Resources Plan – Impact AG-1. Implement Mitigation Measure AG-1.

VCIP Infrastructure Plan – Impact AG-1. Implement Mitigation Measure AG-2.

Mitigation Measure AG-1: Protection of Long-Term Agricultural Land Capability

To avoid or substantially reduce any potential temporary and permanent impacts to agricultural land capability of Farmland due to the long-term temporary repurposing of Farmland for solar energy generation and battery energy storage under the VCIP, the following mitigation measures shall be implemented at the project stage:

1. **Leases/Easements Required on Repurposed Farmland and Limitations on Duration:** To ensure that the solar generation and energy storage use of the repurposed farmland will be limited in duration, the development rights for the repurposed lands shall be in the form of long-term leases or easements, and not fee simple. The lease or easement contracts shall specify terms of no longer than 35 years, with the lease or easement terminating upon decommissioning. The leases or easements may be extended but only upon approval of a new land use permit by the approving agency.
2. **Vegetation and Soil Management Plan.** To ensure that lands temporarily repurposed for solar generation and/or energy storage uses are managed to preserve their long-term agricultural capability, each project proponent shall prepare a Vegetation and Soil Management Plan (VSMP) which shall be implemented for the duration of the lease/easement period through completion of decommissioning. The Plan shall include details on the following: 1) soil testing and identification of soil amendments as

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needed; 2) the seed mixture to be used on-site, including native and desirable non-native, low-stature species; 3) pre-project soil preparation and seed application methods; 4) vegetation and soil condition goals, success criteria, monitoring schedule, and reporting requirements; 5) vegetation and soil maintenance procedures, including adaptive management guidelines and reseeding requirements; 6) timing of implementation. The VSMP shall cover the entire solar/BESS facility site including all areas of the property outside the fence lines of the solar arrays, BESS facilities, substations, and O&M facilities. Ongoing implementation of the VSMP shall be coordinated with the ongoing implementation of the Pest Management and Weed Abatement Plan (PMWAP).

3. **Pest Management and Weed Abatement Plan.** To prevent infestations of invasive weed and vertebrate pest species on lands repurposed for solar generation and energy storage uses, each project proponent shall prepare a Pest Management and Weed Abatement Plan (PMWAP) which shall be implemented for the duration of the lease/easement period through completion of decommissioning and site restoration. The PMWAP shall include details on the following: 1) pre-project inventory, mapping, and removal of invasive weed species prior to construction; 2) identification of target weed and pest species to be controlled during facility construction, operation, and decommissioning; 3) best management practices (BMPs) for prevention, monitoring, and adaptive management of weed and pest species; 4) treatment methods including guidelines for use of pesticides and herbicides; 5) reporting requirements. The prescribed weed control methods may include the use of long-term pre-emergent broadleaf herbicides selected for their specificity to target weed species with minimal anticipated impact on the establishment or health of annual grasses planted in accordance with the VSMP. Weed control methods generally shall not include the use of non-selective soil sterilants or other herbicides that result in long-term inactivity or prevent vegetation, and any application of such soil sterilants shall be limited to substations, BESS facilities, internal roads and driveways, and other limited areas required to be maintained as defensible space, to be determined at the project level on a case-by-case basis. The PMWAP shall cover the entire solar/BESS facility site including all areas of the property outside the fence lines of the solar arrays, BESS facilities, substations, and O&M facilities. Ongoing implementation of the PMWAP shall be coordinated with the ongoing implementation of the VSMP.
4. **Decommissioning and Soil Reclamation Plan.** To ensure that lands repurposed for solar generation and battery storage use are restored to a condition suitable for the resumption of agricultural uses, each project proponent shall prepare a Decommissioning and Soil Reclamation Plan (DSRP) which shall be implemented within six months of cessation of operations at the facilities. The DSRP shall include details on the following: 1) description and photographic inventory of the project site and soils prior to the start of initial site disturbing activities; 2) removal of all above-ground and below-ground project fixtures, equipment, foundations, and gravel driveways; 3) grading and tilling to restore surface soils and subgrade soils to a density and depth consistent with their pre-project condition; 4) revegetation of newly exposed soils in accordance with the VSMP. The implementation of the DSRP shall be ensured through the posting of adequate financial assurance by the project proponent prior to issuance of the first building permit for the project, in accordance with the Financial Assurance Requirements below. The DSRP shall include an appendix containing the Engineer's Cost Estimate that specifies the amount of the financial assurance to be provided.
5. **Financial Assurance Requirements.** To ensure implementation of the Decommissioning and Soil Reclamation Plan upon cessation of facility operations, each project proponent shall post an adequate form of financial assurance to the satisfaction of the District or other lead agency with permitting

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authority over the project, as prescribed here: 1) submittal of a cash bond, Certificate of Deposit, letter of credit, or other financial assurance acceptable to the approving agency; 2) the amount of the financial assurance shall be as specified in an Engineer's Cost Estimate for decommissioning in present value, as approved by the approving agency; 3) the amount of the financial assurance shall be reviewed at least every 10 years and within six (6) months of decommissioning and adjusted to reflect the then current cost estimate for decommissioning; 4) the amount of the financial assurance shall be supplemented every 10 years based on the updated Engineer's Cost Estimate, with the final supplement to be provided at the cessation of facility operations, such that the total amount shall be sufficient to cover the full cost of decommissioning and reclamation. The sufficiency of the cost estimate and the financial assurance for purposes of achieving full decommissioning and site reclamation in accordance with the Reclamation Plan shall be determined by the District or other lead agency prior to execution of the deconstruction contract for decommissioning.

6. **Right to Farm Ordinance.** The applicant must acknowledge Fresno County's Right to Farm Ordinance and shall be required to record a Right to Farm Notice prior to issuance of any permits. This shall be included as a recommended Condition of Approval of the land use entitlement.

Significance After Mitigation: Significant and Unavoidable Plan-Level Impact.

The mitigation measures listed above would serve to preserve the agricultural capability of the repurposed lands during long-term temporary operation of VCIP solar and energy storage facilities, and would ensure that the repurposed lands are returned fully to a condition suitable for resumption of agricultural production upon decommissioning and reclamation. The temporary impact to Farmland would be expected to be reduced to less-than-significant through ongoing measures to protect and conserve the site soils, and permanent impacts to Farmland would be expected to be avoided by reclamation of the site soils to pre-project conditions. In light of the scope and duration of the long-term temporary modification of the Plan Area for renewable energy facilities and the need for project-level details (e.g., whether the proposed project includes sheep grazing or other ongoing agricultural activities) and site-specific information to assess the appropriateness and feasibility of mitigation measures (e.g., Fresno County General Plan Policy LU-A.23), this impact is conservatively considered *significant and unavoidable* at the plan level.

Mitigation Measure AG-2: Mitigation for Farmland Conversion

Unless exempted by Fresno County pursuant to Fresno County General Plan Policy LU-A.23, to avoid or substantially reduce potential impacts due to permanent conversion of up to 60 acres of Farmland at the proposed location of VCIP Substation No. 5, one or a combination of the following mitigation measures shall be considered for implementation at the project stage to achieve a 1:1 ratio for lands permanently lost to nonagricultural uses as specified below:

- 1) Acquisition of conservation easements at a 1:1 ratio for lands permanently lost to nonagricultural uses.
- 2) Acquisition of fee title of agricultural mitigation land that may be held by a third party or the County, at a 1:1 ratio for lands permanently lost to nonagricultural uses.
- 3) Payment of in lieu fees paid to the County that may be used to acquire future mitigation property, equivalent to a 1:1 ratio for lands permanently lost to nonagricultural uses.

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- 4) Payment of fees paid to mitigation banks for mitigation credits equivalent to a 1:1 ratio for lands permanently lost to nonagricultural uses.
- 5) Other forms of acceptable mitigation with provides the equivalent of a 1:1 ratio for lands permanently lost to nonagricultural uses.

Significance After Mitigation: Significant Unavoidable Impact

The mitigation measures listed above would serve to preserve existing agricultural land but would not create new agricultural lands to fully mitigate for agricultural land permanently lost due to the construction of VCIP Substation 5 at its proposed location. The preservation of off-site Farmland through conservation easements or other measures cannot replace permanently converted Farmland. Therefore, these measures would not avoid or reduce impacts related to Farmland to a less than significant level. Impacts related to agricultural resources would be *significant and unavoidable*.

As discussed above, under Fresno County General Plan Land Use Policy LU-A.23 Farmland Conversion, “the County may exempt projects from agricultural mitigation requirements when it has been determined that conversion is occurring pursuant to a local groundwater sustainability plan.” This policy also allows the County to exempt projects from agricultural mitigation requirements “if it finds that the loss of agricultural land caused by the proposed conversion is outweighed by specific overriding economic, legal, social, technological, or other benefits of the conversion, as contemplated by section 21081(b) of the Public Resources Code.” This policy recognizes that potential impacts to agricultural lands should be balanced against the substantial benefits to agriculture that would result from the effective implementation of the District’s GSP, which in this case would be facilitated by the construction of VCIP Substation No. 5. Additionally, by generating up to 21,000 MW per year in furtherance of the state’s renewable energy and climate goals while providing community benefits, implementation of the VCIP would provide substantial and unique environmental, social, and economic benefits that substantially outweigh the conversion of 60 acres. In light of these facts and the unique environmental benefits associated with the VCIP, there is a reasonable basis for not requiring agricultural mitigation for Substation No. 5 at the project-specific level of approval pursuant to General Plan Policy LU-A.23. In addition, in light of the scope and duration of the long-term temporary modification of the Plan Area for renewable energy facilities and the need for project-level details (e.g., whether the proposed project includes sheep grazing or other ongoing agricultural activities) and site-specific information to assess the appropriateness and feasibility of mitigation measures (e.g., Fresno County General Plan Policy LU-A.23), this impact is conservatively considered *significant and unavoidable* at the plan level.

Impact AG-2. Conflict with Agricultural Zoning and Williamson Act

VCIP Energy Resources Plan. The VCIP solar and energy storage facility land uses would be expected to be consistent with the existing Fresno County agricultural zoning for the Plan Area, under which utility-scale solar development that complies with the County’s Solar Facility Guidelines is a conditionally permitted use. Fresno County implements the Williamson Act through contracts with private landowners and assesses compatibility of proposed land uses with those contracts through identified principles and requirements. In light of Fresno County’s role and responsibilities in connection with implementation of the Williamson Act based on site-

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specific information at the project level, this impact is conservatively considered *significant and unavoidable* at the plan level. (*Significant Unavoidable Impact*)

Development of solar and energy storage facilities on lands subject to Williamson Act contracts would be expected to be consistent with the Williamson Act because they are considered electrical facilities and, as such, are deemed compatible uses within any agricultural preserve. Construction of solar generation and energy storage facilities on lands under Williamson Act contracts would not be expected to conflict with any Williamson Act contract. Fresno County implements the Williamson Act through contracts with private landowners and assesses compatibility of proposed land uses with those contracts through identified principles and requirements. In light of Fresno County's role and responsibilities in connection with implementation of the Williamson Act based on site-specific information at the project level, this impact is conservatively considered *significant and unavoidable* at the plan level. (*Significant Unavoidable Impact*).

VCIP Infrastructure Plan. Under the Fresno County Zoning Ordinance, electrical substations, gen-tie lines, and transmission lines are allowable uses in the Agricultural zone subject to an Unclassified Conditional Use Permit. Therefore, implementation of the VCIP Infrastructure Plan would not be expected to conflict with agricultural zoning. (*No Impact*)

Under the Williamson Act, electrical facilities are deemed compatible uses within any agricultural preserve. Construction of VCIP substations, gen-tie lines, and transmission lines would not be expected to conflict with any Williamson Act contract. Fresno County implements the Williamson Act through contracts with private landowners and assesses compatibility of proposed land uses with those contracts through identified principles and requirements. In light of Fresno County's role and responsibilities in connection with implementation of the Williamson Act based on site-specific information at the project level, this impact is conservatively considered *significant and unavoidable* at the plan level. (*Significant Unavoidable Impact*)

VCIP Energy Resources Plan – Analysis of Impact AG-2

Agricultural Zoning

Almost all DFA lands are currently zoned "Exclusive Agricultural, 20-acre minimum parcel size (AE-20)" by Fresno County. In the western portions of the Plan Area, some DFA lands are zoned AE-40 (40-acre minimum parcel size). These Agricultural zoning designations do not specifically allow for solar PV facilities or energy storage facilities; however, under chapter 808.2 of the Fresno County Zoning Ordinance, "public utility facilities" are allowable uses in the Agricultural zones subject to a Conditional Use Permit. Additionally, under Fresno County Zoning Ordinance Section 842.5.020.B, utility-scale solar facilities and other renewable energy projects are permitted through the County's Unclassified Conditional Use Permit (UCUP) process subject to the County's Solar Facility Guidelines. Since the VCIP solar and energy storage projects would not be substantially different from similar projects previously approved under the Solar Facility Guidelines in Fresno County, and since they would implement all County Solar Facility Guidelines requirements such as preparation of Reclamation Plans and Pest Management Plans, VCIP projects would be permissible with UCUPs consistent with the County's agricultural zoning.⁵ Therefore, the implementation of the VCIP Energy Resources Plan would have *no impact* in terms of conflict with agricultural zoning.

⁵ See Section 4.11 *Land Use and Planning* for a detailed analysis of consistency of the typical VCIP project with Fresno County's Solar Facility Guidelines.
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Williamson Act

Within the VCIP Development Focus Areas, there are approximately 64,340 acres under Williamson Act contracts, accounting for about 44 percent of the total DFA acreage. There are approximately 640 acres of DFA lands under Farmland Security Zone contracts, and there are no DFA lands upon which contract Non-Renewal notices have been recorded. Approximately 75,240 acres, or 55 percent of DFA lands, are not enrolled in the Williamson Act Program, of which all but 3,040 acres are owned by the District. When the District acquired these lands, any existing Williamson Act contracts on these lands were rendered null and void under the Government Code since public agencies may not be parties to Williamson Act contracts.

Contracted Lands

Under the Williamson Act, the development of VCIP solar and energy storage facilities would be permitted to occur on contracted lands if such facilities are deemed compatible uses. Government Code section 51238(a)(1) provides that unless the Fresno County Board of Supervisors “makes a finding to the contrary, the erection, construction, alteration, or maintenance of gas, electric, water, communication, or agricultural laborer housing facilities are hereby determined to be compatible uses within any agricultural preserve.” Thus, locating solar generation and related storage facilities (i.e., electric facilities) on land within an agricultural preserve may be allowed as a compatible use depending on the local rules governing compatibility (CEC 2023c). The Fresno County Board of Supervisors adopted the “Interim Program Guidelines and Procedures” (County Guidelines) (Fresno County 2004), which include rules related to compatible uses on lands under Williamson Act contracts. The County Guidelines set forth an overarching compatibility standard: “Pursuant to the Williamson Act, the use of enrolled lands and improvements shall be limited to commercial agricultural uses or uses determined to be compatible or incidental to commercial agriculture.” Apart from housing or agricultural housing incidental to a commercial agricultural use, the County Guidelines are silent regarding other uses which may be deemed compatible with or incidental to commercial agriculture. Thus, the proposed VCIP facilities are deemed compatible uses if they are “determined to be compatible or incidental to commercial agriculture.”

The VCIP’s compatibility must be understood in light of the District’s unique role in promoting commercial agriculture in Fresno County and the VCIP’s objectives related to water supply and commercial agriculture. The District’s mission is to provide timely, reliable and affordable water services to landowners and water users in western Fresno and Kings Counties. These water services include the sustainable management and delivery of water supply, as well as the provision of ongoing education, advanced technology and innovative methods for environmental conservation. The District primarily provides water deliveries to commercial agricultural growers and helps maximize the beneficial use of all water delivered. Consistent with the District’s mission and responsibilities to its landowner-members, a primary purpose of the VCIP is to support and ensure the sustainability of commercial agriculture within the overall farming units within the Plan Area through long-term but temporary repurposing of farmlands within the DFAs. Due to chronic and increasing water supply shortages, over the last ten years, an average of 189,640 acres of land have been fallowed each year within the Plan Area. These existing conditions of widespread fallowing and reduced water supply reliability undermine commercial agriculture on contracted lands within Plan Area. The VCIP would positively address these fundamental challenges by promoting repurposing of farmland and facilitating the redirection of scarce surface water allocations to other productive agricultural land within the District. The objective of these efforts is to maintain viability of the farming units through temporary repurposing of farmland which would be subject to long-term fallowing in any event. Additionally, as provided in AB 2661, electricity generated by the VCIP “shall be used for the Westlands Water District for its own purposes,” which are fundamentally compatible or

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incidental to commercial agriculture. For these reasons, implementation of the proposed VCIP would be compatible with and ultimately designed to promote commercial agriculture.

The VCIP's compatibility with any contracted lands is also supported by an analysis of the principles of compatibility under the Williamson Act. These three principles of compatibility, set forth in Government Code Section 51238.1(a), are provided below, along with a discussion of the potential VCIP solar and energy storage projects' consistency with each.

- 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 preserves" (Gov. Code, section 51238.1(a)(1)).

Consistency:

As discussed in detail under Impact AG-1, the solar and energy storage use of the DFA lands would be limited by the predicted useful life (and lease/easement terms) of these facilities, which is anticipated to be 35 years. Upon decommissioning, the lands would be restored to pre-project conditions through implementation of a County- or District-approved Reclamation Plan, which would be guaranteed by the posting of performance bonds or other forms of financial surety. Any conditional use permits issued by the County for solar and energy storage projects would be temporary and would expire upon termination of the solar lease, with the termination date to be specified in the Reclamation Plan. This reflects the County's objective that the solar and energy storage uses will be temporary, albeit long term, in nature.

The long-term temporary duration of the solar use is also reflected in the type of land transactions that would be required with participating landowners in the VCIP. Instead of having the solar developers purchase the land in fee simple, the DFA lands would be subject to leases or long-term easements for solar use, for a term of 35 years, with the explicit provision that these leases/easements will be extinguished upon decommissioning of the solar facilities, with all land rights reverting to the underlying landowner. Modification of these agricultural lands for solar and related facilities represents a management decision for certain agricultural lands within the overall farming unit(s). The farming unit remains intact because the management or fallowing decision enhances the productivity of the overall ongoing agricultural use.

Recognition that the solar and energy storage facilities will be agriculturally compatible and temporary, albeit long-term, in nature is further reflected in the District's Rules and Regulations which provide that agricultural lands modified to a non-irrigable use may retain their eligibility for water supply (i.e., for onsite use and/or for transfer to other agricultural lands in the District) subject to specified conditions, including a requirement that the subject lands either retain their existing agricultural character during the operational life of the project or, upon cessation of project uses, will be returned to a condition suitable for agricultural use. Such water transfers are not permitted unless projects proposed on the modified lands are subject to use permits with a defined expiration date, and have approved Decommissioning Plans backed by financial assurances. Thus, both the District and the County have established mechanisms and measures to ensure that the temporary solar use will not significantly compromise the long-term productive agricultural capability of any contracted parcel within the DFAs.

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Similarly, implementation of the VCIP would also not significantly compromise the long-term productive agricultural capacity of contracted parcels outside the DFAs. Instead, because implementation of the VCIP would enhance the productivity of the overall farming units within the Plan Area by facilitating the redirection of scarce surface water allocations to other productive agricultural land within the District, the VCIP will improve the long-term productive agricultural capacity of these other contracted lands.

- 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 land in the 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” (Gov. Code, section 51238.1(a)(2)).

Consistency:

Due to chronic shortages of CVP contract water deliveries and reduced water supply reliability, over the last ten years, an average of 189,640 acres of land has been fallowed in the Plan Area each year. As provided under Impact AG-1, this baseline rate of fallowing is expected to increase and already substantially exceeds the acreage of potentially repurposed lands within the DFAs (136,000 acres total). As such, an objective of the VCIP is to prioritize potential projects on farmlands that have been fallowed or removed from irrigated agriculture due to lack of reliable water supply. In recognition that it is not feasible and therefore not reasonably foreseeable to maintain agricultural operations on all parcels in the Plan Area, the VCIP represents a management decision to strategically repurpose certain agricultural lands to enhance agricultural productivity within the overall farming unit(s). By repurposing farmland under the VCIP, scarce surface water allocations would be redirected to other productive agricultural land within the District. This management strategy will help avoid haphazard fallowing decisions and provide a necessary buffer against the existing conditions that threaten to displace or impair current operations on other parcels. Also, before implementing any potential VCIP project, the applicant would have to acknowledge the County’s Right to Farm Ordinance and record a Right to Farm Notice prior to issuance of any permits. Recording this Right to Farm Notice would further ensure that agricultural operations on other contracted lands would not be affected. For these reasons, during its operational life, the VCIP would not significantly displace or impair current or reasonably foreseeable agricultural operations.

Upon decommissioning the potential VCIP facilities after 35 years of operation, the mechanisms put in place to ensure that the subject lands are restored to a condition suitable for the resumption of agricultural uses, as summarized under item 1 above, ensure that VCIP projects would not significantly displace reasonably foreseeable agricultural operations on those lands. Instead, the temporary use of the subject lands for non-agricultural uses would facilitate the continued viability of the larger farming units and therefore relates directly to the agricultural production on the remainder of the farming units on neighboring lands.

- 3) “The use will not result in the significant removal of adjacent contracted land from agricultural or open-space use” (Gov. Code, section 51238.1(a)(3)).

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Consistency:

As discussed in item 2, the temporary use of a portion of the farming unit for non-agricultural uses would enhance the productivity of the larger farming units and therefore help them remain in agricultural production, and thus would prevent the removal of the adjacent contracted land from agricultural use. For adjacent contracted lands that are not part of the larger farming unit, the solar and related facilities would not conflict with adjacent agricultural operations, as discussed in detail under Impact AG-3. Therefore, it is unlikely that VCIP solar and energy storage facilities would undermine the viability of agricultural operations on adjacent contracted lands and thereby lead to their conversion to non-agricultural uses.

In summary, the long-term temporary use of contracted VCIP lands for solar and related uses would be expected to be consistent with three principles of compatibility under the Williamson Act. Therefore, the implementation of potential VCIP energy/storage facilities on lands under Williamson Act contracts would not be expected to conflict with any Williamson Act contract. Fresno County implements the Williamson Act through contracts with private landowners and assesses compatibility of proposed land uses with those contracts through identified principles and requirements. In light of Fresno County's role and responsibilities in connection with implementation of the Williamson Act based on site-specific information at the project level, this impact is conservatively considered *significant and unavoidable* at the plan level. (*Significant Unavoidable Impact*).

For informational purposes, it is noted that AB 1156, which relates to solar-use easements and Williamson Act contracts, was passed by the California State Assembly on June 3, 2025, and is currently being considered by the State Senate. (For a description of solar use easements, see Section 4.2.2. *Regulatory Context*). The bill would, among other things, revise the definition of "solar-use easement" under the Williamson Act and would expand the authorized uses of the land under the easement to include solar energy storage and appurtenant renewable energy facilities. The bill would revise the conditions under which land subject to a Williamson Act contract may be subject to a solar-use easement and would require conversion of the Williamson Act contract into a solar-use easement for the defined term rather than rescission of the contract, if the Department of Conservation determines that the parcel is eligible to be placed in the easement. While this PEIR does not rely on the pending legislation, it is noted that the passage of AB 1156 would further support the conclusion that implementation of the proposed VCIP would not be expected to conflict with any Williamson Act contracts at the project level.

VCIP Infrastructure Plan

Agricultural Zoning

The elements of the VCIP Infrastructure Plan (collection substations, gen-tie lines, connector transmission lines) are all located in Fresno County. Within Fresno County, all infrastructure elements would be located on lands that are designated for agricultural land uses under the County General Plan and Zoning Ordinance. Under chapter 808.2 of the Fresno County Zoning Ordinance, "public utility facilities" are allowable uses in the Agriculture zone subject to a Conditional Use Permit. Under Section 842.5.020(B), "public utility and public services, structures, and uses" are allowed subject to an Unclassified Conditional Use Permit (Fresno County 2024a). Therefore, the VCIP collection substations, gen-tie lines, and connector transmission lines to be located in the Agricultural zones in Fresno County, as planned, would be in conformance with the applicable agricultural zoning of the County Zoning Ordinance. Implementation of the VCIP Infrastructure Plan would have *no impact* in terms of conflict with agricultural zoning.

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Williamson Act

The elements of the VCIP Infrastructure Plan (gen-tie lines, transmission lines) would occupy or traverse lands subject to Williamson Act contracts. None of the five planned VCIP collection substations would occupy lands under Williamson Act contract. The gen-tie lines and internal VCIP transmission lines would mainly traverse non-contracted lands in the eastern portions of the Plan Area, but would cross some contracted lands in the western and southern portions of the Plan Area, as well as isolated parcels dispersed elsewhere in the Plan Area. These gen-tie lines and internal VCIP transmission lines would traverse contracted lands both within and outside of the proposed DFAs, with very few contracted lands traversed in the DFAs.

Government Code section 51238(a) provides that “unless the board or council . . . makes a finding to the contrary, the erection, construction, alteration, or maintenance of gas, electric, water, communication, or agricultural laborer housing are hereby determined to be compatible uses within any agricultural preserve.” The Fresno County Williamson Act Guidelines do not specifically restrict the above uses and broadly provide that “the use of enrolled lands and improvements shall be limited to commercial agriculture or uses determined to be compatible or incidental to commercial agriculture.”

As provided in detail above, implementation of the VCIP is expected to be compatible with and intended to promote commercial agriculture within the Plan Area (see the discussion regarding the compatibility of the proposed VCIP Energy Resources Plan with Williamson Act contracts). The VCIP Infrastructure Plan would be integral to VCIP implementation and achieving the VCIP’s objectives related to water supply and facilitating the redirection of scarce water supplies to enhance commercial agricultural production. As such, the VCIP Infrastructure Plan facilities would be expected to be compatible with any contracted lands. If elements of the VCIP Infrastructure Plan are located on or traverse contracted lands within the DFAs, then the implementation of those elements would be expected to be consistent with such Williamson Act contracts due to the compatibility of both the VCIP Infrastructure Plan and VCIP Energy Resources Plan facilities with those contracts.

If gen-tie lines and internal VCIP transmission lines traverse contracted lands within the Plan Area but are outside of the DFAs, then these facilities would also be expected to be compatible with such Williamson Act contracts due to the small footprint of these facilities and their compatibility with commercial agriculture. For example, in approving the Jayne Ave Gen-Tie project (Initial Study Application No. 7635 and Unclassified Conditional Use Permit Application No. 3650), Fresno County found that the proposed gen-tie line to be a compatible use with the subject Williamson Act contract (Fresno County 2019b). In this project, most of the parcels where the gen-tie easement was proposed were restricted by a Williamson Act contract. However, due to the small footprint of the transmission towers, and because the towers were proposed to support the generation of renewable energy, they were considered to be a compatible use with the contract. In light of Fresno County’s role and responsibilities in connection with implementation of the Williamson Act based on site-specific information at the project level, however, this impact is conservatively considered *significant and unavoidable* at the plan level.

Overall Impact of the VCIP Related to Agricultural Zoning and Williamson Act

As discussed above, the implementation of both the VCIP Energy Resources Plan and the VCIP Infrastructure Plan would not be expected to have significant project-level impacts in terms of conflicts with agricultural zoning or the Williamson Act. In light of Fresno County’s role and responsibilities in connection with implementation of the Williamson Act based on site-specific information at the project level, however, this impact is conservatively considered *significant and unavoidable* at the plan level.

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Mitigation Measures:

VCIP Energy Resources Plan – Impact AG-2. Implement Mitigation Measures AG-1 and AG-2, as applicable.

VCIP Infrastructure Plan – Impact AG-2. Implement Mitigation Measures AG-1 and AG-2, as applicable.

Impact AG-3. Land Use Conflicts Resulting in Potential Conversion of Farmland to Non-Agricultural Uses

VCIP Energy Resources Plan. The potential land use conflicts resulting from constructing the VCIP solar and energy storage facilities adjacent to ongoing agricultural operations on Farmlands would not directly or indirectly result in the conversion of those adjacent Farmlands to non-agricultural uses. (*Less-than-Significant Impact*)

VCIP Infrastructure Plan. Construction of the VCIP collector substations, gen-tie lines, and connector transmission lines would not directly or indirectly result in the conversion of adjacent Farmlands to non-agricultural uses. (*Less-than-Significant Impact*)

VCIP Energy Resources Plan – Analysis of Impact AG-3

Most of the lands surrounding the VCIP Development Focus Areas are in active agricultural production.

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 limitations on aerial application of seeds, fertilizers, and pesticides.

Solar facilities represent a far less intensive use of the land than residential and other urban land uses in terms of their 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 insubstantial 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. Therefore, the operation of the VCIP solar and energy storage facilities would have little or no direct negative effects on surrounding farming operations.

To provide physical separation between the VCIP renewable energy projects and neighboring agricultural operations, the projects would include a minimum 50-foot buffer zone between the external project boundaries and the nearest solar arrays and other project structures, as required by Fresno County. In addition to the required 50-foot buffers, in many instances additional separation would be provided by rights-of-way for County roads and water conveyance features.

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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 would be required for all VCIP projects in Dust Control Plans required by the SJVAPCD, would reduce potential dust impacts to less-than-significant levels.⁶

Development of the solar and energy storage facilities could also result in the introduction of invasive weed species and animal pests to the area, which could negatively affect nearby farmlands. However, the potential for invasive weed species and pests would be minimized at all VCIP projects through implementation of the Pest Management Plans (PMPs) required under the Fresno County Solar Facility Guidelines. Implementation of the PMPs would reduce the potential impact of invasive weed species and pests to less-than-significant levels.

Conversely, the solar facility operator would not have the right to complain to adjacent farm operators about noise and dust from farming 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 4.2.2. *Regulatory Context* above, which requires acknowledgement of the right of growers to conduct customary farming operations and practices without restriction. The recordation of this acknowledgement is required as a condition of any project approval. Therefore, it is unlikely that conflicts would arise between the VCIP facility operators and adjacent agricultural operations as to undermine the viability of the agricultural operations and thereby lead to their conversion to non-agricultural uses.

It is unlikely that VCIP renewable energy development would induce owners of nearby lands to convert their farmlands to solar or energy storage use by way of facilitating such development through installation of supporting infrastructure. The VCIP solar and energy storage facilities would not include electrical infrastructure with excess capacity that could be used to support other solar generating facilities on adjacent farmland outside of the VCIP Development Focus Areas. The VCIP Infrastructure Plan is designed to provide only sufficient capacity to serve the needs of the VCIP renewables development. VCIP implementation would not result in construction of new roadways beyond internal maintenance driveways, and thus would not provide new vehicular access to adjacent lands. Since development under the VCIP would not include any excess infrastructure service capacity that could serve adjacent land, it would not induce the owners of such lands to remove them from agricultural use by reason of available surplus infrastructure capacities.

Unlike urban development, the VCIP solar generating and storage facilities would not induce other development nearby, either for the purpose of providing support services to VCIP facilities or for taking advantage of services provided by the VCIP facilities. Solar generating and storage 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 general plan policies and agricultural zoning, and thus VCIP implementation would not result in the conversion of adjacent farmland through urban growth inducement.⁷

As there is little or no potential that implementation of the VCIP Energy Resources Plan would directly or indirectly result in the conversion of adjacent farmlands to non-agricultural uses, this impact would be *less than significant*.

⁶ For a full discussion, see Section 4.3. *Air Quality* under Impact AQ-1.

⁷ For further discussion, see Section 7.2. *Growth-Inducing Effects of the Proposed Project*.

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VCIP Infrastructure Plan – Analysis of Impact AG-3

The elements of the VCIP Infrastructure Plan (collection substations, gen-tie lines, connecting transmission lines) would be located adjacent to existing agricultural operations in many instances. The VCIP collection substations would be self-contained with tall perimeter fencing, and the enclosed areas would include large structural elements on concrete pads set among graveled yards with paved driveways and parking areas. The substations may include several operational employees, but the overall level of activity would be very light. The substations would not conflict with adjacent agricultural activities and thus they would not directly or indirectly result in the conversion of adjacent farmlands to nonagricultural uses.

The routes of the gen-tie lines serving VCIP solar and energy storage facilities have not been defined since their ultimate alignments will depend on the pattern and timing of solar and energy storage development under VCIP. However, based on the location and configuration of DFA lands, it is reasonable to assume that most of the gen-tie lines will be routed through DFA lands although some segments will likely need to bridge non-DFA lands to serve noncontiguous project sites within the DFAs. For gen-tie segments that will run through DFA lands, it is expected that their alignments would be accommodated in the site plans for the related solar and energy storage projects and would have no effect on nearby farmlands.

For gen-tie segments that would be routed through non-DFA lands, it is expected that these segments would be routed adjacent to existing County roads and farm roads on section lines and half-section lines to the extent practicable. The intent would be to follow routes where agricultural lands have already been bisected by existing public roadways and farm roads to minimize disturbance of previously undisturbed farming operations. The footprints of the gen-tie lines would be very small, with approximately 0.2 acre of temporary ground disturbance at each tower site during construction, and 0.02 acre of long-term displacement by the towers following construction and restoration of the construction zones. The gen-tie towers would be spaced at least 800 feet apart. Continued cultivation would be allowed within the gen-tie easements except for a small clearance area around each tower, and the landowners would be fully compensated for any damage to crops or improvements as specified in the easement agreements. The agricultural acreage displaced at the widely dispersed tower sites would be insubstantial and would not have a significant adverse effect the overall viability of any farming operation. Therefore, the placement of monopoles on small parcels located at intervals along an agriculture operation would not result in the conversion of the adjacent farmlands to non-agricultural uses, and the impact in this regard would be *less than significant*.

The VCIP connector transmission lines would also largely be routed through DFA lands where their alignments would be planned in coordination with site planning for adjacent solar and energy storage projects, and where they would not directly affect agricultural operations. Some transmission line segments would pass through non-DFA lands with ongoing agricultural operations. As is the case with gen-tie routing, the alignment of these transmission segments would be planned to follow existing rights-of-way for public roads, as well as along farm roads on section lines or mid-section lines, to avoid bisecting farm fields to the extent feasible. The tower footprints would be small, with approximately 1.0 acre of temporary ground disturbance at each tower site during construction, and 0.1 acre of long-term displacement by the towers following construction and restoration of the construction zones. The transmission towers would be spaced approximately 1,000 feet apart on average. Continued cultivation would be allowed within the transmission easements except for a small clearance area around each tower, and the landowners would be fully compensated for any damage to crops or improvements as specified in the easement agreements. The agricultural acreage displaced at the widely dispersed tower sites would be insubstantial and would not have a significant adverse effect on the overall viability of any farming operation. Therefore, the placement of transmission towers on small parcels

located at intervals along the frontage of an agriculture operation would not result in the conversion of the adjacent farmlands to non-agricultural uses, and the impact in this regard would be *less than significant*.

Overall Impact of the VCIP Related to Conversion of Adjacent Farmland to Non-Agricultural Uses

Implementation of both the VCIP Energy Resources Plan and the VCIP Infrastructure Plan would have less-than-significant impacts related to potential land use conflicts with ongoing agricultural operations on Farmlands, and thus would not directly or indirectly result in the conversion of those adjacent Farmlands to non-agricultural uses. The overall impact of VCIP implementation in this regard would be *less than significant*.

Mitigation Measures:

VCIP Energy Resources Plan – Impact AG-3. No mitigation is required.

VCIP Infrastructure Plan – Impact AG-3. No mitigation is required.

Impact AG-4. Loss of Forest Land, Conflicts with Zoning for Forest Land or Timberland, or Potential Conversion of Forest Land to Non-Forest Use

VCIP Energy Resources Plan. Implementation of the VCIP Energy Resources Plan would not directly result in the loss of forest land, would not conflict with zoning for forest land or timberland, and would not indirectly result in the conversion of forest lands to non-forest uses. (*No Impact*)

VCIP Infrastructure Plan. Implementation of the VCIP Infrastructure Plan would not directly result in the loss of forest land, would not conflict with zoning for forest land or timberland, and would not indirectly result in the conversion of forest lands to non-forest uses. (*No Impact*)

VCIP Energy Resources Plan – Analysis of Impact AG-4

There are no lands within the Plan Area or vicinity that are zoned forest land, timberland, or Timberland Production under the applicable statutes. No portions of the Plan Area are zoned for forestland or timberland, according to the Fresno County Zoning maps (Fresno County 2025b). As such, implementation of the VCIP Energy Resources Plan would have *no impact* with respect to conflict with existing zoning for such land, or in terms of causing the rezoning of such lands.

The entire Plan Area consists of agricultural land, and there is no forest land within the Plan Area or in the vicinity. As such, the implementation of the VCIP Energy Resources Plan would have *no impact* in terms of loss or conversion of forest land.

VCIP Infrastructure Plan – Analysis of Impact AG-4

The VCIP collection substations, gen-tie lines, and connector transmission lines are all located within the Plan Area. As discussed above, the Plan Area includes no lands zoned forest land, timberland, or Timberland Production under the applicable statutes. As such, implementation of the VCIP Infrastructure Plan would have

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no impact with respect to conflict with existing zoning for such land, or in terms of causing the rezoning of such lands.

The entire Plan Area consists of agricultural land, and there is no forest land within the Plan Area or in the vicinity. As such, implementation of the VCIP Infrastructure Plan would have *no impact* in terms of loss or conversion of forest land.

Overall Impact of the VCIP on Forest and Timberland

Implementation of the VCIP Energy Resources Plan and VCIP Infrastructure Plan would not directly result in the loss of forest land, would not conflict with zoning for forest land or timberland, and would not indirectly result in the conversion of forest lands to non-forest uses. Therefore, VCIP implementation would have *no impact* overall in this regard.

Mitigation Measures:

VCIP Energy Resources Plan – Impact AG-4. No mitigation is required.

VCIP Infrastructure Plan – Impact AG-4. No mitigation is required.

4.2.3.2. TRANSMISSION CORRIDORS OUTSIDE THE VCIP

The transmission corridors for delivery of solar generation from VCIP projects to urban electricity markets in northern and southern California have been identified at a conceptual level in this PEIR to allow a general discussion of environmental impacts associated with transmission line development in these corridors for informational purposes. These transmission delivery corridors extend far beyond the District’s boundaries and are not part of the proposed VCIP. Planning and approval of these outside transmission lines are under the jurisdiction of state and federal energy regulatory agencies public utilities, and the counties and cities traversed by the corridors. The following discussion provides an overview of potential impacts of the outside transmission lines upon agriculture and forestry resources.

Agricultural Resources

Farmland Conversion

The delivery transmission lines extending outside the Plan Area to regional load centers would have a total corridor length of approximately 348 miles, of which about 96 miles would pass through Farmlands composed of “Prime Farmland,” “Farmland of Statewide Importance” and “Unique Farmlands.” As shown in Table 4.2-3, construction of the delivery transmission lines would result in temporary disturbance of approximately 1,155 acres of Farmland at tower construction sites, pulling and tensioning sites, and staging areas. Upon completion of transmission line construction, most of these lands would be restored and returned to agricultural use. During operation of the transmission lines, the transmission towers would each occupy 0.1 acre, and would result in the total long-term use of 81 acres at the 809 tower sites located on Farmland.

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It is anticipated that the delivery transmission lines would not be decommissioned. Those lines would continue to serve as essential backbone infrastructure for the state and federal transmission systems. Therefore, the small parcels of Farmland occupied by the transmission towers would not be reclaimed. However, the displacement of 81 acres of Farmland dispersed over 96 miles at 809 separate disturbance sites of 0.1 acre each would not adversely affect agricultural production on the adjacent farming operations and would represent an insubstantial loss of Farmland across the 10 affected counties. Therefore, the impact of the transmission lines outside the Plan Area upon agricultural resources would be *less than significant*.

TABLE 4.2-3
TRANSMISSION LINES OUTSIDE VCIP PLAN AREA – FARMLAND DISTURBANCE ESTIMATES¹

Transmission Project Feature	Quantities		Farmland*	Disturbance	(Acres)
	Total T-Line	Farmland* Only	Total Disturbance Area	Temporarily Disturbed/ To be Restored	Disturbed for Long-Term
Tower Sites	3,020 ²	809 ³	809 ⁴	728	81 ⁵
Pulling/Tensioning Sites	275 ⁶	74 ⁷	296 ⁸	296	0
Staging/Material Storage Sites	35 ⁹	10 ¹⁰	50	50	0
Totals	--		1,155 ac.	1,074 ac.	81 ac.

Footnotes:

¹ Total length of outside transmission line is approximately 547 line miles.

² Towers at 5 towers per line mile. (547 line miles X 5 towers per mile = 2,735 towers; + 10% extra towers for turns and crossings = 274 towers; Total = 3,009 towers sites.).

³ Total line miles in Farmland = 147 line miles X 5 = 735 tower sites +74 towers (10% for turning and crossing points) = 809 tower sites.

⁴ Temporary disturbance area at each tower site = up to 1.0 acre , i.e., temporary clear areas = up to 210 X 210 feet.

⁵ Long-term disturbance area at each tower site = 0.1 acre, i.e., permanent clear areas = 65 X 65 feet.

⁶ Pulling/Tensioning sites are two miles apart. (549 line miles / 1 site per 2 miles = 275 sites).

⁷ Pulling/Tensioning sites in Farmland (147 line miles / 1 site per 2 miles = 74 sites)

⁸ Pulling/Tensioning sites estimated to disturb an average of 4 acres at each site.

⁹ One staging site per 10 miles of corridor over 348 corridor miles = 35 staging sites. Each staging site is 5 acres.

¹⁰ One staging site per 10 miles of corridor over 96 corridor miles in Farmland = 10 staging sites. Each staging site is 5 acres.

* As mapped by the Department of Conservation, Farmland Monitoring and Mapping Program in 2020 (CDOC 2023a).

"Farmland" includes Prime Farmland, Farmland of Statewide Importance, and Unique Farmland. Farmland of Local Importance is not included in the definition of "Farmland" per CEQA Guidelines Appendix G).

Source: CDOC 2024

Conflicts with Agricultural Zoning or Williamson Act

Regarding agricultural zoning, the delivery transmission lines would pass through the unincorporated areas of 10 counties to the north, west and south of the Plan Area. In each of these counties, the transmission lines would traverse lands zoned for Agriculture. Depending on the county, the zoning ordinances allow utility facilities either as permitted uses, conditionally permitted uses subject to Planning Commission approval, or permitted subject to administrative approval or Planning Commission review (Alameda Co. 2025a, 2025b; Fresno Co. 2024a, 2025b; Kern County 2009, 2025a, 2025b; Kings County 2010a, 2025a, 2025b; LA County 2015, 2025a, 2025b; Merced Co. 2013, 2025a, 2025b; Monterey Co. 2007, 2010, 2025; San Benito Co. 2015b, 2025a, 2025; San Joaquin Co. 2025a, 2025b; Stanislaus Co. 2023, 2025; Lancaster 2025; Palmdale 1992, 2021, 2025). Therefore, the delivery

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transmission lines outside the Plan Area would not conflict with Agricultural zoning, and there would be *no impact* in terms of conflicts with agricultural zoning.

With respect to the Williamson Act, the north and southbound delivery transmission lines would mainly traverse contracted lands within the San Joaquin Valley. The northern transmission lines would leave the valley floor in the vicinity of the Dos Amigos Pumping Plant and follow the lower slopes of the Diablo Range northward where few lands are under Williamson Act contract. The western transmission corridor mostly traverses mountainous terrain of the Coast Ranges and passes through two small agricultural valleys with Williamson Act contracts. The southern transmission lines would leave the valley floor southeast of Bakersfield and pass over the Tehachapi Range and then cross the Antelope Valley where few lands are under contract. Throughout the mountain areas of the Coast and Tehachapi Ranges, many lands are under contract as non-prime or grazing lands, while the farmlands in the small agricultural valleys are under contract as Prime Farmland. As mentioned above, under Government Code section 51238(a), electrical facilities are deemed to be compatible uses within any agricultural preserve under the Williamson Act, including Farmland Security Zones. The Government Code does not specifically mention transmission lines as the type of electrical facility that would be deemed compatible with a Williamson Act contract. However, local, state and federal jurisdictions have determined that transmission lines are compatible uses under this Government Code section (e.g., Jayne Avenue gen-tie by Fresno County; Darden Solar gen-tie by CEC; San Luis Transmission Project by WAPA; Barren Ridge Renewable Transmission Project by LADWP)(Fresno County 2019, CEC 2025, WAPA 2015, LADWP 2012). In addition, any transmission towers on contracted lands would have a very small footprint (e.g., 0.1 acre each), and the towers would be spaced approximately 1,000 feet apart, so the total area of land disturbance on any given contracted parcel would be insubstantial and would not impede or impair the agricultural use of the contracted land. Therefore, construction of the transmission lines outside the Plan Area would not conflict with the Williamson Act, and there would be *no impact* in this regard.

Potential Conversion of Adjacent Farmland to Non-Agricultural Use

The delivery transmission lines would involve acquisition of easements or permanent rights-of-way outside the Plan Area. Approximately 28 percent of the total length of these transmission corridors would pass over Farmland. Although alignments for the delivery transmission lines have not been set, it is anticipated that they would run parallel and adjacent to existing transmission line corridors for their entire lengths. This route planning approach is consistent with the state's Garamendi Principles, which encourage new transmission lines to follow routes where agricultural lands have already been bisected by existing transmission or transportation corridors to minimize disturbance of farming operations (CEC 2022). As with the VCIP connector transmission lines, the tower footprints would be small, with approximately 1.0 acre of temporary ground disturbance at each tower site during construction, and 0.1 acre of long-term displacement by the towers following construction and restoration of the construction zones. The transmission towers would be spaced approximately 1,000 feet apart on average. Continued cultivation would be allowed within the transmission easements except for a small clearance area around each tower, and the landowners would be fully compensated for any damage to crops or improvements as specified in the easement agreements. The agricultural acreage displaced at the widely dispersed tower sites would be insubstantial and would not have a significant adverse effect on the overall viability of any farming operation. Therefore, the placement of transmission towers on small parcels located at intervals alongside existing transmission lines would not result in the conversion of the adjacent farmlands to non-agricultural uses, and the impact in this regard would be *less than significant*.

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Forestry Resources

The delivery transmission lines extending outside the Plan Area would traverse 10 counties en route to the regional load centers. The planned routes for the outside transmission lines do not pass through any lands which are zoned forest land, timberland, or Timberland Production under the applicable statutes. In addition, no National or State Forests are in the vicinity of the delivery transmission corridors.

The northern transmission route would traverse the San Joaquin Valley floor from the Newpoint Substation northwestward to the vicinity of the Dos Amigos Pumping Plant, where it would cross over I-5 and follow the lower elevations of the Diablo Range north to the Tracy and Tesla Substations. The land cover along the northern transmission route consists primarily of agricultural land on the valley floor, and in the foothill segments it consists entirely of annual grasslands which transitions to blue oak woodlands on the higher terrain to the west. No part of the northern transmission corridor passes through forest lands (USFS 2017). The northern transmission route passes through the counties of Fresno, Merced, Stanislaus, San Joaquin, and would terminate at the Tracy and Tesla Substations in Alameda County. In all of these counties the transmission route would pass through lands zoned Agriculture. Timber harvesting is not a permitted use in Agricultural zones in any of the affected counties (Fresno Co. 2024c; Merced Co. 2025a; Stanislaus Co. 2023; San Joaquin Co. 2025a; Alameda Co. 2025a).

The western transmission corridor would extend westward over the Coast Ranges through San Benito and Monterey counties to Moss Landing on Monterey Bay. The mountainous terrain is covered by a mixture of oak woodland, scrub, and chaparral. In both counties, timber harvesting is permitted in the unincorporated areas (Monterey Co. 2025; San Benito Co. 2025a). Construction of the western transmission line would largely follow the existing transmission line to Moss Landing and would be served by existing access roads. Given the open nature of the woodland along most of the route, the amount of tree removal needed for the new transmission line is anticipated to be insubstantial.

The southern transmission route would extend southward on the San Joaquin Valley floor until reaching the Tehachapi Range southeast of Bakersfield. The transmission route would then run southeastward over the mountains for about 21 miles, running adjacent to the existing SCE 500 kV transmission line. This transmission route passes through the unincorporated areas of the counties of Fresno, Kings, Kern and Los Angeles, and the cities of Lancaster and Palmdale, en route to the Vincent Substation near Acton. In all of the unincorporated county areas, the southern transmission route passes through lands zoned Agriculture (Fresno County 2025b; Kings County 2025a; Kern County 2025b; LA County 2025b). Under the Kern County Zoning Ordinance, permitted uses in Agricultural zones include the growing and harvesting of timber (Kern County 2025a). However, as discussed below, the transmission route through the mountain area passes exclusively through oak woodlands which are protected under the Kern County General Plan Land Use, Open Space, and Conservation Element – Policy 65, in conformance with the State’s oak woodland protection requirements under Public Resources Code 21083.4 (Oak Tree Preservation) (Kern County 2009). In northern Los Angeles County, the transmission route passes exclusively through lands zoned A-2, where timber logging is permitted subject to Site Plan Review (LA County, 2025a). However, as discussed below, the Los Angeles County transmission segment passes through the juniper woodland of the Antelope Valley, a high desert region with sparse coverage of junipers and other desert-adapted species unsuitable for logging (USFS 2017). In the City of Lancaster, the transmission route passes exclusively through lands zoned Rural Residential (Lancaster 2025). In the City of Palmdale, the transmission route partially passes through lands zoned Single-Family Residential, and in the City's Ritter Ranch and Anaverde Nuevo Specific Plan areas it passes through lands designated/zoned Open Space (Palmdale 1992, 2021, 2025). Timber harvesting is not permitted in any of these land use and zoning designations.

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In the 21-mile transmission segment crossing the Tehachapi Range, the alignment traverses two forest ecosystem types including 12 miles of sparsely wooded blue oak woodland, and 9 miles of moderately to densely wooded canyon live oak forest (USFS 2017). Construction of this transmission segment would require little or no removal of trees within the blue oak woodland which consists almost entirely of chaparral in this segment. Within the segment passing through the canyon live oak forest, the construction of the transmission line may require the removal of individual trees at some tower sites, although mature oaks would be avoided to the extent feasible as required under the Kern County General Plan and state law. Since the existing SCE 500-kV transmission line is served by existing tower access roads in the mountain area, the new transmission line would not involve removal of additional trees for access roads.

In northern Los Angeles County, a 78-mile segment of the southern transmission corridor passes through the Antelope Valley where the dominant ecosystem is juniper woodland. This area is characterized by open desert with sparse coverage by junipers and other species endemic to the high desert. Los Angeles County's Antelope Valley Area Plan Policy COS 16.1 states that new development shall: "minimize removal of native vegetation" and "ensure that a large percentage of the land is left in its natural state." Timber harvesting is not a permitted use under the Antelope Valley Area Plan (LA County 2015).

In summary, construction of transmission lines outside the Plan Area would not conflict with zoning for forest land or timberland since no lands within or near the transmission corridors are zoned timberland. The construction of the transmission lines would involve removal of some trees at the tower locations, although mature specimens of oak and other native species would be avoided to the extent feasible as required by local ordinances. Therefore, the outside transmission lines would not directly result in the loss of forest land and would not indirectly result in conversion of forest lands to non-forest uses. Therefore, construction of the delivery transmission lines would have a *less-than-significant impact* on forestry resources.

4.2.3.3. CUMULATIVE IMPACTS

Agricultural Resources

VCIP Energy Resource Plan and Infrastructure Plan

Farmland Conversion

For purposes of this analysis, the scope of potential cumulative impacts related to Agricultural Resources includes the portions of western Fresno and Kings counties located on the San Joaquin Valley floor. In 2018, approximately 1.61 million acres of land in Fresno and Kings counties were classified by the FMMP as Farmland (i.e., Prime Farmland, Farmland of Statewide Importance, and Unique Farmland). Between 2018 and 2020, the acreage of Farmland was reduced by 21,927 net acres, representing a net loss of 1.4 percent over the two-year period (CDOC 2022b, CDOC 2023b). (Farmland conversion data for 2020-2022 had not been published by CDOC as of April 15, 2025.)

The cumulative projects considered in this analysis are listed in Table 4.0-2 and consist mainly of solar PV projects. The total land area covered by these completed, approved, and pending projects is approximately

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39,818 acres, of which non-solar projects comprise about 1,463 acres.⁸ Of this total, approximately 29,792 acres are mapped as Farmlands of Local Importance and other non-Farmland categories (CDOC 2022a, CDOC 2025). Many of these lands consist of former farmlands that were retired by the District. These lands are classified as Farmlands of Local Importance and thus do not qualify as Farmlands under CEQA. Therefore, the development of solar projects and other projects on these lands would not represent a significant impact to agricultural resources, either individually or cumulatively.

The remaining cumulative projects occupy approximately 10,026 acres of Prime Farmland or Farmland of Statewide Importance, which are considered Farmland under CEQA. Of this total, approximately 9,100 acres are or will be occupied by solar or energy storage projects, and 926 acres are the sites of non-solar projects (CDOC 2022a, CDOC 2025). As discussed in detail under Impact AG-1 above, development of PV solar and energy storage facilities on Farmlands in Fresno and Kings counties would not be expected to represent a significant impact at the project level because: 1) the solar and energy storage projects would be constructed and operated in a manner that would result in the preservation of the agricultural soils during the 35-year operating lives of the facilities; and 2) upon decommissioning, all of these projects would implement Reclamation Plans which would restore the soils to pre-project conditions. Long-term preservation of these Farmlands would be ensured through the implementation of Reclamation Plans upon decommissioning, as required by Fresno County, which would restore these farmlands to pre-project conditions and thus facilitate the resumption of agricultural production on those lands. As such, the use of the cumulative sites for solar and energy storage facilities would be temporary, and the lands would be returned to a condition suitable for long-term preservation for agricultural use. The temporary, albeit long-term, repurposing of the cumulative project lands for renewable energy uses would help meet the objectives of the District and the farming community of enhancing the productivity and long-term viability of the larger farming units, and also of furthering implementation of the District's GSP.

An exception to the above applies to projects which were developed in the mid-2010s by PG&E which do not require decommissioning, involving 810 acres of Farmland. Therefore, a total of 1,736 acres of Farmland occupied by cumulative solar and non-solar projects would not be restored (i.e., 926 acres of non-solar projects and 810 acres associated with the subject PG&E projects). While some of these projects may be subject to mitigation in the form of conservation easements, this would not provide full mitigation for the loss of Farmland. Therefore, the permanent conversion of these 1,736 acres of Farmlands represents a *cumulatively significant and unavoidable impact* related to agricultural resources.

As discussed under Impact AG-1, full implementation of VCIP would result in permanent conversion of approximately 47 acres of Farmland along the VCIP gen-tie lines and the connector transmission line, consisting of many small parcels at tower sites distributed over many miles of transmission line. Removal of these small, dispersed parcels of Farmland would not have a significant impact on agricultural resources or operations. The construction of VCIP collector substation No. 5 at its proposed site would result in the permanent conversion of 60 acres of Farmland and this would represent a significant impact to agricultural resources. Unless exempted by Fresno County pursuant to Fresno County General Plan Policy LU-A.23, this impact would be partially mitigated through acquisition of conservation easements or equivalent off-site compensatory mitigation as provided in Mitigation Measure AG-2. Development of the solar PV and energy storage projects would not be expected to result in permanent conversion of farmland since all these sites would retain their essential agricultural characteristics and would be restored upon decommissioning. A total

⁸ Table 4.0-2 includes a total of 72 cumulative projects; however, four of these projects comprise solar/BESS projects within the VCIP DFAs. Since the plan level impacts of DFA development, including these projects, are addressed in the main impact analysis sections of this PEIR, they are not addressed again in the cumulative analyses. {00081343.1}

of 47 dispersed acres of Farmland would be converted for gen-tie and transmission lines, and 60 acres to be converted for a VCIP collection substation, with the latter potentially requiring mitigation to the extent feasible (i.e., partial mitigation) in the form of conservation easements. [Note: Although the County could exempt the conversion of 60 acres of Farmland at VCIP Substation No. 5 from its agricultural mitigation requirements under General Plan Policy LU-A.23, the impact to Farmland would still be significant and unavoidable.] In addition, as discussed above under Impact AG-1, in light of the scope and duration of the long-term temporary modification of the Plan Area for renewable energy facilities and the need for project-level details (e.g., whether the proposed project includes sheep grazing or other ongoing agricultural activities) and site-specific information to assess the appropriateness and feasibility of mitigation measures (e.g., Fresno County General Plan Policy LU-A.23), this impact is conservatively considered *significant and unavoidable* at the plan level. Therefore, the contribution of VCIP implementation to the cumulative impact related to agricultural resources would be considered *cumulatively considerable*, and the overall *cumulative impact would be significant*.

Conflicts with Agricultural Zoning or Williamson Act

As discussed under Impact AG-2 above, implementation of the VCIP Energy Resources and Infrastructure plans would have no impact in terms of conflicts with agricultural zoning or any Williamson Act contracts. As discussed, all proposed VCIP land uses are allowable uses in the applicable Agricultural zones subject to an Unclassified Conditional Use Permit granted under the Fresno County Zoning Ordinance.

As provided in detail under Impact AG-2, the VCIP projects would be expected to be compatible with any Williamson Act contracts for several reasons. Both the VCIP energy and infrastructure projects would be considered electrical facilities that meet the definitions and criteria for compatible uses under the Government Code and Fresno County Williamson Act Guidelines (Gov. Code, sections 51238(a)(1), 51238.1(a)). As discussed, the VCIP is proposed in response to existing challenges of reduced water supply reliability and chronic shortages of CVP contract water deliveries, which have necessitated the fallowing of an average of 189,640 acres per year within the Plan Area over the last ten years and undermine commercial agricultural production on contracted lands. To contribute to the solution to these conditions, a primary objective of the VCIP is to support and enhance commercial agriculture within the overall farming units within the Plan Area. As such, implementation of the VCIP would be expected to be compatible with commercial agriculture and would help ensure the sustainability of commercial agriculture in the Plan Area.

The VCIP energy projects would be expected to be consistent with the three principles of compatibility set forth in Government Code section 51238.1(a). In addition to the reasons provided above, VCIP energy projects would be expected to satisfy the principles of compatibility because they would be temporary, albeit long-term uses that would be managed to conserve the agricultural character of the lands to ensure that they would be returned to agricultural use upon decommissioning and reclamation. As such, the VCIP energy projects would not be expected to result in permanent or temporary conversion of Farmlands.⁹ Recently approved and pending projects in Fresno County further confirm that the VCIP gen-ties, connector transmission lines, and substations would be considered electrical facilities which meet the definitions and criteria for compatible uses under the Government Code and Fresno County Williamson Act Guidelines. As such, VCIP implementation would not be expected to conflict with any Williamson Act contracts. As discussed above under Impact AG-2, however, in light of Fresno County's role and responsibilities in connection with implementation of the Williamson Act based on site-specific information at the project level, this impact is conservatively considered *significant and unavoidable* at the plan level. Therefore, the contribution of VCIP implementation to the

⁹ Although the proposed location of VCIP Substation 5 is on lands classified as Farmland, it is not subject to a Williamson Act contract.

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cumulative impact with respect to conflicts with agricultural zoning or Williamson Act contracts would be considered *cumulatively considerable*, and the overall *cumulative impact would be significant*.

Potential Conversion of Adjacent Farmland to Non-Agricultural Use

As discussed under Impact AG-3 above, VCIP implementation would have a less-than-significant impact in terms of potential to result in conversion of adjacent lands to non-agricultural use. Solar facilities are generally compatible with adjacent agricultural operations, and solar facility operators would be precluded from complaining about neighboring agricultural operations through recordation of a Right-to-Farm acknowledgement on the title of the parcel on which the solar facility is located. In addition, the VCIP Infrastructure Plan would include no surplus transmission capacity that could support conversion of adjacent non-DFA lands to solar and energy storage use.

The cumulative solar and energy storage projects would be very similar to the VCIP projects in terms of compatibility with adjacent agricultural operations. To provide interconnection to the electrical grid, each cumulative project would be served by a dedicated gen-tie line which would be designed and constructed with only enough capacity to serve its associated solar facility. Thus, both the VCIP and other cumulative solar and energy storage facilities would have little or no surplus infrastructure capacity to serve additional solar facilities on adjacent Farmland.

In summary, the potential for the cumulative projects, including the projects developed under VCIP, to result in conversion of adjacent Farmlands represents a *less-than-significant cumulative impact*, and the contribution of VCIP implementation *would not be cumulatively considerable*.

Transmission Corridors Outside the VCIP

As discussed above, the delivery transmission towers would result in the displacement of Farmland at approximately 809 very small sites (0.1 acre each) distributed over 10 counties. In aggregate, the towers would displace a total of 81 acres of Farmland over a corridor length of 96 miles traversing Farmland (or 0.84 acre per mile). These small dispersed displacements would not adversely affect agricultural production on their larger agricultural parcels or adjacent agricultural land, and thus the delivery transmission lines would represent an insubstantial loss of Farmland across the 10 affected counties. Since transmission lines are permitted or conditionally permitted uses in the Agricultural zones in all of the affected counties, there would be no conflict with agricultural zoning. Since transmission lines are compatible uses under the Williamson Act, there would also be no impact in terms of conflicts with any affected Williamson Act contracts. The outside transmission lines also would not conflict with adjacent agricultural operations or result in the conversion of adjacent Farmlands. Therefore, the impact of the delivery transmission lines upon agricultural resources would be less than significant, and the contribution to a cumulative impact would not be considerable. Other cumulative development in the 10 affected counties would occur in accordance with local general plan and zoning. Some of that development would occur on Farmland surrounding existing urbanized areas. The impacts of Farmland conversion would be partially offset by compensatory mitigation, but no feasible measures are available to reduce these impacts to less-than-significant levels. Therefore, the cumulative impacts to agricultural resources would be cumulatively significant. However, as discussed above, the contribution of the outside transmission corridor projects to the cumulative impact would not be cumulatively considerable. Therefore, the impact of construction of the delivery transmission lines outside VCIP relative to agricultural resources would be *cumulatively less than significant*.

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Forestry Resources

VCIP Energy Resources and Infrastructure Plans

As discussed under Impact AG-4 above, no portions of the Plan Area are zoned for forestland or timberland; and there is no forest land within the Plan Area. As such, VCIP implementation would have *no impact* in terms of conflicts with zoning for forestland or timberland and would not result in the loss or conversion of forest land. Therefore, VCIP implementation would not cause or contribute to any cumulative effect related to forestry resources and *no cumulative impact* would occur.

Transmission Corridors Outside the VCIP

As discussed above, no portions of the delivery transmission corridors are zoned for forestland or timberland. Portions of the transmission corridors pass through open woodland in the mountain areas, and some mature trees would be unavoidably removed at new tower sites. The overall impact of tree removals is considered insubstantial and would occur in compliance with local rules and regulations; as such the impact would be less than significant. Construction of the delivery transmission lines would have *no impact* in terms of conflicts with zoning for forestland or timberland, and would have a less-than-significant impact regarding conversion of forest land. Therefore, the transmission lines outside the VCIP would *not make a cumulatively considerable contribution* to any cumulative effect related to forestry resources, and the cumulative impact associated with the outside transmission lines would be *less than significant*.

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4.3. AIR QUALITY

This section includes the following discussion and analysis related to air quality: existing environmental and regulatory setting; criteria and methodology for evaluating impacts; and the results of the impact assessment, including identification of potentially significant impacts and corresponding mitigation measures to avoid or substantially lessen such impacts to the extent feasible. The following discussion is based on the Air Quality Assessment prepared for the PEIR by Illingworth & Rodkin, Inc., in July 2025, which is contained in Appendix B of this PEIR, and its findings are summarized below.

PEIR Scoping Comments

During the PEIR Scoping Process, the District received two letters containing comments related to air quality (see PEIR Scoping Report in Appendix A of this document). The comments are summarized below.

Leadership Counsel for Justice and Accountability

The EIR must include a robust analysis of air quality impacts from the construction and operation of the project, including an analysis of criteria pollutants and the potential for fires associated with energy storage and transmission. It is critical for the EIR to analyze air quality impacts given that this VCIP will be implemented in a region that is already out of compliance with federal air quality standards.

[Potential impacts associated with air quality are addressed below in Section 4.3.3. *Environmental Impact Analysis* under Impacts AQ-1 through AQ-4. Potential impacts associated with potential fires from battery storage systems are addressed in Section 4.9. *Hazards and Hazardous Materials* under Impact HAZ-2.]

The EIR should analyze the human health impacts of air quality changes from the projects in the VCIP and explain the nature and magnitude of the impact. The EIR must not only analyze potential human health impacts for the project but also describe them to give the general public notice as to how their health might be affected.

[Potential impacts associated with human health impacts are addressed below in Section 4.3.3. *Environmental Impact Analysis* under Impacts AQ-3 through AQ-4.]

San Joaquin Valley Air Pollution Control District (SJVAPCD)

The comments from SJVAPCD include a discussion of air quality status in the San Joaquin Valley Air Basin, general recommendations regarding methods for conducting the air quality analyses for VCIP, procedures for mitigation, and SJVAPCD rules and regulations regarding permitting. [Potential impacts associated with air quality are addressed below in Section 4.3.3. *Environmental Impact Analysis* under Impacts AQ-1 through AQ-4.]

4.3.1. Environmental Setting

Air Basin Characteristics

Topography

The Plan Area is located in the southwestern portion of the San Joaquin Valley Air Basin. The San Joaquin Valley is surrounded on three sides by mountain ranges 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 Plan 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 San Joaquin 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 (PM₁₀) concentrations.

Criteria Air Pollutants and their Health Effects

The primary criteria air pollutants that would be emitted by potential VCIP projects include ozone precursors (nitrogen oxides and reactive organic gases), CO, PM₁₀ and PM_{2.5}. Other criteria pollutants, such as Pb and SO₂, do not require further analysis because they would not be appreciably emitted by the VCIP projects or project traffic, and air quality standards for them are being met throughout the San Joaquin Valley Air Basin. A description of each relevant criteria pollutant (i.e., nitrogen oxides, reactive organic gases, O₃, CO, PM₁₀ and PM_{2.5}) is provided below, based primarily on information made available by US EPA, the California Air Resources Board (CARB), and the San Joaquin Valley Unified Air Pollution Control District (SJVAPCD).

Ozone (O₃)

While O₃ 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

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harmful to the human respiratory system and to sensitive species of plants. O₃ concentrations build to peak levels during periods of light winds, bright sunshine, and high temperatures. Ozone is a strong irritant that attacks the respiratory system, leading to lung tissue damage. Short-term O₃ exposure can reduce lung function in children, make people 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 a headache or cough, or may experience a burning sensation in the chest.

O₃ 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) (though NO₂ is itself a criteria pollutant) and reactive organic gases (ROG). NO_x and ROG are emitted from a variety of stationary and mobile sources¹. In 2007, CARB adopted an 8-hour health-based standard for O₃ of 0.070 parts per million (ppm)². In 2015, the US EPA also revised the 8-hour NAAQS for O₃ to 0.070 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 (chest pain caused by reduced blood flow to the heart) in persons with serious heart disease. Primary sources of CO in ambient air are exhaust emissions from passenger cars, light-duty trucks, and residential wood burning. The monitored CO levels in the San Joaquin Valley during the last 10 years have been well below ambient air quality standards.

Nitrogen Dioxide (NO₂)

The major health effect from exposure to high levels of NO₂ is the risk of acute and chronic respiratory disease. NO₂ is a combustion by-product, but it can also form in the atmosphere by chemical reaction. NO₂ is a reddish-brown colored gas often observed during the same conditions that produce high levels of O₃ and can affect regional visibility. NO₂ is one compound in a group of compounds consisting of oxides of nitrogen (NO_x). As described above, NO_x is an O₃ precursor compound. Monitored levels of NO₂ in the San Joaquin Valley are below ambient air quality standards.

Particulate Matter (PM)

Respirable (inhalable) particulate matter (PM₁₀) 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. PM₁₀ and PM_{2.5} represent fractions of particulate matter that can be inhaled and cause adverse health effects. PM_{2.5} (including diesel exhaust particles) is thought to have greater effects on health because minute particles can 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

¹ Stationary air pollutant sources are those regulated by SJVAPCD and mobile sources are those regulated by U.S. EPA and CARB that include cars, trucks, trains, aircraft, watercraft, construction equipment, lawn equipment, etc.

² This is the running average of 8 consecutive 1-hour average concentrations of the pollutant.

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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.

The current state PM₁₀ standard is 20 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) for an annual average³. The state 24-hour average⁴ standard is 50 $\mu\text{g}/\text{m}^3$. PM_{2.5} standards were first promulgated by the US EPA in 1997 and are currently 35 $\mu\text{g}/\text{m}^3$ for 24-hour exposures. US EPA revoked the annual PM₁₀ standard due to lack of scientific evidence correlating long-term exposures of ambient PM₁₀ with health effects. The California Ambient Air Quality Standards (CAAQS) has only an annual average PM_{2.5} standard, which is set at 12 $\mu\text{g}/\text{m}^3$, which is similar to the NAAQS (CARB 2025f). In 2024, U.S. EPA strengthened the annual PM_{2.5} standard from 12.0 $\mu\text{g}/\text{m}^3$ to 9.0 $\mu\text{g}/\text{m}^3$, based on an integrated assessment of an extensive body of new scientific evidence, which improved the body of knowledge regarding PM_{2.5}-related health effects.

Toxic Air Contaminants

Besides the "criteria" air pollutants, there are other groups of substances found in ambient air—Hazardous Air Pollutants (HAPs) under the CAA and Toxic Air Contaminants (TACs) under the CCAA. 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 regional, 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 HAPs⁵(US EPA 2024). EPA identified nine compounds with contributions from mobile sources that are among the cancer risk drivers or contributors and non-cancer hazard contributors, based on the 2011 National Air Toxics Assessment (NATA)⁶. The Federal Highway Administration (FHWA 2023) identifies these as 1,3-butadiene, acetaldehyde, acrolein, benzene, diesel particulate matter (diesel PM), ethylbenzene, formaldehyde, naphthalene, and polycyclic organic matter. FHWA considers these the priority mobile source air toxics,

TACs include all HAPs plus other contaminants identified by CARB. These are a broad class of compounds known to cause morbidity or mortality (e.g., 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).

³ The average of all 24-hour period measurements in a calendar year.

⁴ Measured over a 24-hour period of a day.

⁵ See U.S. EPA <https://www.epa.gov/haps/initial-list-hazardous-air-pollutants-modifications> accessed March 31, 2025

⁶ See U.S. EPA <https://www.epa.gov/national-air-toxics-assessment/2014-nata-assessment-results> accessed on March 31, 2025.

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 (CARB 2025g). 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 CARB, and are listed as carcinogens either under state or federal programs.

CARB reports that recent air pollution studies have shown 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 1998, CARB formally identified DPM as a TAC. DPM 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 US EPA as HAPs, and by CARB as TACs. Most diesel exhaust particles (over 90 percent) consist of PM_{2.5}. Like other particles of this size, a portion will eventually become trapped within the lungs, 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 plan to reduce DPM emissions (CARB 2000). The US EPA and CARB adopted low sulfur diesel fuel standards in 2006 that substantially reduced ambient air diesel particulate matter concentrations.

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 PM₁₀ and PM_{2.5}. Wood smoke is an irritant and is implicated in worsening asthma and other chronic lung problems.

4.3.2. Regulatory Context

Federal

Clean Air Act (CAA)

The federal Clean Air Act (CAA) established ambient air quality standards for different pollutants. Ambient standards specify the concentration of pollutants to which the public may be exposed without adverse health effects. The CAA initially established national ambient air quality standards (NAAQS) for six "criteria" pollutants. These criteria pollutants now include carbon monoxide (CO), ozone (O₃), nitrogen dioxide (NO₂), respirable particulate matter with a diameter less than 10 microns (PM₁₀), sulfur dioxide (SO₂), 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. Individuals vary widely in their sensitivity to air

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pollutants, and standards are set to protect more pollution-sensitive populations (e.g., children and the elderly). National standards are reviewed and updated periodically based on new health studies.

At the federal level, the US EPA administers and enforces air quality regulations. Federal air quality regulations were developed primarily from implementation of the CAA. Areas with monitored pollutant concentrations that are lower than ambient air quality standards are designated “attainment” on a pollutant-by-pollutant basis. If an area does not meet NAAQS over a set period (three years), US EPA designates it as a “nonattainment” area for that pollutant. US EPA requires states with nonattainment areas 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. This plan is referred to as the State Implementation Plan (SIP)(US EPA 2025b)⁷. 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.

The US EPA also has programs for identifying and regulating hazardous air pollutants. The CAA requires US EPA to set standards for these pollutants and sharply reduce emissions of controlled chemicals. Industries are classified as major sources if they emit 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 reformulate 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 CAA to address ozone, particulate matter air pollution. 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 to achieve all standards within the deadlines specified in the CAA. These plans are submitted to the State of California, which after approval, submits them to US EPA as the SIP.

State

California Clean Air Act (CCAA)

The California Clean Air Act (CCAA) has also established ambient air quality standards for different pollutants. California ambient air quality standards (CAAQS) include the NAAQS pollutants and hydrogen sulfide (H₂S), sulfates (SO₄), vinyl chloride (VC), 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. State standards are reviewed and updated periodically based on new health studies.

The CCAA outlines a program for areas in the state to attain the CAAQS by the earliest practical date. The California Air Resources Board or CARB is the state air pollution control agency and is a part of the California EPA. The California Clean Air Act sets more stringent air quality standards for all of the pollutants covered under national standards, and additionally regulates levels of VC, H₂S, SO₄, and visibility-reducing particulates. If an area does not meet CAAQS, CARB designates the area as a nonattainment area. 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. The San Joaquin Valley Air Basin does not meet the CAAQS for ozone, PM₁₀, and PM_{2.5} (SJVAPCD 2025a)

⁷ The SIP is a collection of regulations and documents used by the state and SJVAPCD to implement, maintain, and enforce the NAAQS, and to fulfill other requirements of the Clean Air Act.
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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 towards attainment (SJVAPCD 2022).

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. California's 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. The NAAQS and CAAQS are shown in Table 4.3-1.

TABLE 4.3-1
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 4 th 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 98 th percentile daily maxima)
Sulfur dioxide			
	24-hour	0.04 ppm (105 µg/m ³)	—
	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 99 th 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 98 th 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 2024.

SO₂ Federal 24 hour and annual standards are not applicable in the SJVAPCD.

µg/m³ = micrograms per cubic meter

ppm = parts per million

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TACs

California developed a program under the Tanner Toxics Act (Health and Safety Code sections 39650-39674, enacted as Assembly Bill [AB] 1807 in 1983) to identify, characterize and control TACs. Subsequently, AB 2728 (1987) incorporated all 188 HAPs into the AB 1807 process. The "Hot Spots information and Assessment Act," AB 2588, requires stationary sources to report the types and quantities of certain TACs routinely released into the air. SJVAPCD implements Air District, State and federal air toxics regulations, including the AB 2588 Air Toxics "Hot Spots" Program. SJVAPCD Regulation VII specifically addresses air toxics.

Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986), which became law in 1986, is a voter initiative law that prohibits the exposure of individuals to chemicals known to cause cancer or reproductive toxicity without emitters first giving clear and reasonable warning and prohibits discharge of these chemicals into drinking water. This law requires that the Governor revise and republish at least once per year the list of chemicals known to the State to cause cancer or reproductive toxicity within the meaning of the Act (Health and Safety Code section 25249.8). The list is published in Title 27, California Code of Regulations, section 27001.

San Joaquin Valley

The San Joaquin Valley Air Pollution Control District (SJVAPCD or Air District) 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. Rules and regulations have been developed by SJVAPCD to control air pollution from a wide range of air pollution sources. In March 2006, SJVAPCD adopted an Indirect Source Review (ISR) rule (Rule 9510) that controls air pollution from new land development projects (SJVAPCD 2018). SJVAPCD also conducts public education and outreach efforts such as the Spare the Air, Wood Burning, and Smoking Vehicle voluntary programs.

Existing Air Quality

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 4.3-2 was derived for each pollutant based upon the closest monitoring station to the project site.

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. Many areas of the San Joaquin Valley lie downwind of urban areas that are a source of ozone precursor pollutants. While Fresno County is fairly rural, exceedances of the ozone standard occurred on 31 to 41 days per year, based on the last three years of available monitoring data.

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TABLE 4.3-2
SUMMARY OF CRITERIA AIR POLLUTION MONITORING DATA FOR FRESNO COUNTY

Pollutant	Standard	Monitored Values / & Exceedance Days		
		2021	2022	2023
Ozone (ppm)	State 1-Hour	0.125 / 12	0.112 / 4	0.117 / 4
Ozone (ppm)	State 8-Hour	0.100 / 41	0.089 / 31	0.088 / 35
Ozone (ppm)	Federal 8-Hour	0.100 / 39	0.089 / 30	0.088 / 30
PM ₁₀ (ug/m ³)	State 24-Hour	149.8 / 20	166.5 / 133	130.0 / 120
PM ₁₀ (ug/m ³)	Federal 24-Hour	151.8 / 0	73.4 / 0	131.1 / 0
PM ₁₀ (ug/m ³)	State Annual	NR	NR	NR
PM _{2.5} (ug/m ³)	Federal 24-Hour	104.6 / 39.7 ⁽²⁾	55.8 / 21.5	51.3 / 11.0
PM _{2.5} (ug/m ³)	State Annual	15.7	14.8	12.6
PM _{2.5} (ug/m ³)	Federal Annual	17.2	14.8	12.6
Carbon Monoxide (ppm)	State/Fed.8-Hour	NR / -- ⁽³⁾	NR / -- ⁽³⁾	NR / -- ⁽³⁾
Nitrogen Dioxide (ppm)	State 1-Hour	0.064 / 0	0.061 / 0	0.061 / 0
Nitrogen Dioxide (ppm)	Federal 1-Hour	0.065 / 0	0.062 / 0	0.062 / 0
Nitrogen Dioxide (ppm)	State Annual	0.018	0.019	0.010

Source: CARB 2024

Particulate Matter (PM_{2.5} and PM₁₀)

Most areas of California have either 24-hour or annual PM₁₀ concentrations that exceed the CAAQS. 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 PM₁₀ 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 the 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 most directly emitted particulate matter. This includes dust from paved and unpaved roads. CARB estimates that 85 percent of directly emitted PM₁₀ and 66 percent of directly emitted PM_{2.5} are 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. A review of San Joaquin Valley monitoring data shows high PM₁₀ and PM_{2.5} levels during the fall⁸.

⁸ CARB ADAM Data at <http://www.arb.ca.gov/adam/index.html>, Accessed 11/07/2024.
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Carbon Monoxide

State and federal standards for carbon monoxide are met throughout California by cleaner vehicles and fuels that were reformulated in the 1990s. Because CO levels are so low in the Air Basin, monitoring was discontinued after 2012.

Other Pollutants

Air monitoring data indicate that the San Joaquin Valley meets ambient air quality standards for NO₂, SO₂, and lead. CARB does not routinely monitor Pb, sulphates, H₂S and VC in the Air Basin.

Air Quality Trends

Air quality in the San Joaquin Valley has improved significantly despite the natural low capacity for pollution created by unique geography, topography, and meteorology. Emissions have been reduced at a rate similar to or better than other areas in California. Since 1990, emissions of ozone precursors (i.e., NO_x and ROG) have been reduced by 80 percent, resulting in fewer days where ozone standards have been exceeded. Direct emissions of PM₁₀ and PM_{2.5} have also been substantially reduced. The San Joaquin Valley is the first Air Basin previously classified as “serious nonattainment” under the NAAQS to come into attainment of the PM₁₀ 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 does not meet state or federal ambient air quality standards for ground level O₃ and PM_{2.5}, or state standards for PM₁₀. The attainment status for the San Joaquin Valley with respect to various pollutants of concern is shown in Table 4.3-3 on the next page.

Under the CAA, the US EPA has classified the region as *extreme nonattainment* for the 8-hour O₃ standard. The Air Basin has attained the NAAQS for PM₁₀. The Air Basin is designated *nonattainment* for the PM_{2.5} standard. CARB anticipates the San Joaquin Valley will also be designated nonattainment for the new 2024 PM_{2.5} annual standard. The US EPA classifies the region as *attainment* or *unclassified* for all other air pollutants, which include CO and NO₂.

At the state level, the Air Basin is considered *severe non-attainment* for ground level O₃ and *nonattainment* for PM₁₀ and PM_{2.5}. In general, the CAAQS are more stringent than the NAAQS. The Air Basin is required to adopt plans on a triennial basis that show progress toward meeting the State O₃ standard. The Air Basin is considered *attainment* or *unclassified* for all other pollutants.

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TABLE 4.3-3
PLAN 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	Nonattainment
Fine Particulate Matter (PM _{2.5})	Nonattainment	Nonattainment
Carbon Monoxide (CO)	Attainment	Attainment
Nitrogen Dioxide (NO ₂)	Attainment	Attainment
Sulfur Dioxide (SO ₂)	Attainment	Attainment
Sulfates and Lead	No Designation	Attainment
Hydrogen Sulfide	No Designation	Unclassified
Visibility Reducing Particles	No Designation	Unclassified

Regional Air Quality Plans

In response to not meeting the NAAQS, the region is required to submit a SIP to US EPA through the state. The SIP is the compilation of regulations and plans used to implement and maintain the NAAQS for each nonattainment pollutants.

CARB submitted an Extreme Ozone Attainment Demonstration Plan to EPA in 2004, which addressed the old 1-hour NAAQS. US EPA approved the region’s 2007 Ozone Plan (Plan) in March 2012, which addressed the 1997 8-hour ozone NAAQS. 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. In June 2016, the SJVAPCD adopted a plan addressing the 2008 8-Hour Ozone Standard, later approved by US EPA in 2019. In December 2022, the SJVAPCD adopted a plan which addressed the 2015 8-Hour Ozone Standard (SJVAPCD 2022). This Plan satisfies the requirements of the CAA in addition to ensuring expeditious attainment of the 0.70 ppm 8-hour ozone standard.

The SJVAPCD adopted the *2024 Plan for the 2012 PM_{2.5} Standards* in June 2024. This plan was approved by CARB in July 2024 and fulfills the remaining CAA requirements, including the final modeling analysis, attainment strategy and emission reduction commitments, reasonable further progress/quantitative milestones, and contingency measures. This Plan demonstrates expeditious attainment of the 2012 PM_{2.5} standard by 2030.

Both the ozone and PM_{2.5} plans include measures (i.e., federal, state and local) that would be implemented through state and Air District rulemaking or program funding to reduce air pollutant emissions. Transportation Control Measures (TCMs) are part of the SIP. These are strategies that reduce transportation-related air pollution, GHG emissions, and fuel use by reducing vehicle miles traveled and improving roadway operations. The plans described above that address ozone NAAQS also meet the state planning requirements.

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SJVAPCD Rules and Regulations

The SJVAPCD has adopted rules and regulations that apply to land use projects, such as the potential VCIP solar projects. These are described below.

Indirect Source Review (ISR) Rule

In 2005, the SJVAPCD adopted the ISR (SJVAPCD Rule 9510) to reduce ozone precursors (i.e., ROG and NO_x) and PM₁₀ emissions from new land use development projects (SJVAPCD 2018). The rule resulted from the adoption of SJVAPCD commitments in the 2004 Extreme Ozone Attainment Demonstration Plan and the 2006 PM₁₀ Plan. These plans identified the need to reduce PM₁₀ and NO_x substantially to attain and maintain the NAAQS on schedule.

New discretionary development projects with a certain amount of proposed square footage or residential units upon full buildout are subject to the ISR Rule. It is understood that any VCIP projects that propose to develop 9,000 square feet would be subject to the ISR Rule (Rule 9510, section 2.1.10). The ISR 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 ISR Rule requires mitigated exhaust emissions during construction based on the following levels:

- 20 percent reduction from unmitigated baseline in total NO_x exhaust emissions
- 45 percent reduction from unmitigated baseline in total PM₁₀ exhaust emissions

For operational emissions, Rule 9510 requires the following reductions:

- 33.3 percent of the total operational NO_x emissions from unmitigated baseline
- 50 percent of the total operational PM₁₀ 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. It is expected that in accordance with the ISR Rule, each potential VCIP project would be required to apply for approval of an Air Impact Assessment (AIA) to the SJVAPCD. The AIA would provide the calculation of project emissions to determine the amount of fees payable for unmitigated emissions.

Regulation VIII – Fugitive PM₁₀

SJVAPCD controls fugitive PM₁₀ through Regulation VIII (Fugitive PM₁₀ Prohibitions). The purpose of this regulation is to reduce ambient concentrations of PM₁₀ 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 SJVAPCD approval that meet the regulation requirements. Fees are collected by SJVAPCD to cover costs for reviewing plans and conducting field inspections.

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Other SJVAPCD Rules

The potential VCIP projects may be subject to other SJVAPCD rules, including but not limited to the following:

- **Rule 4101** (Visible Emissions): The purpose of this rule is to prohibit the emissions of visible air contaminants to the atmosphere. The provisions of this rule apply to operations that emit or may emit air contaminants.
- **Rule 4102** (Nuisance): The purpose of this rule is to protect the health and safety of the public, and applies to operations that emits or may emit air contaminants or other materials.
- **Rule 4601** (Architectural Coatings): The purpose of this rule is to limit Volatile Organic Compounds (VOC) emissions from architectural coatings. Emissions are reduced by limits on VOC content and providing requirements on coatings storage, cleanup, and labeling.
- **Rule 4641** (Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations): The purpose of this rule is to limit VOC emissions from asphalt paving and maintenance operations.

(SJVAPCD 2025b)

Fresno County**Fresno County General Plan**

The Fresno County General Plan (Fresno County 2024b) includes the following goals and policies related to air quality that may be relevant to the VCIP.

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.2 Air Quality Impact Assessment

The County shall ensure that air quality impacts identified during the CEQA review process are fairly and consistently mitigated. The County shall require projects to comply with the County's adopted air quality impact assessment and mitigation procedures.

Policy OS-G.11 Sensitive Receptors

The County shall continue, through its land use planning processes, to avoid inappropriate location of residential uses and sensitive receptors in relation to uses that include, but are not limited to, industrial and manufacturing uses and any other uses which have the potential for creating a hazardous or nuisance effect.

Policy OS-G.14 Fugitive Dust Control Measures

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.

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Policy OS-G.15

Access Road Standards

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.

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 residences, schools, playgrounds, childcare centers, retirement homes, convalescent homes, hospitals, and medical clinics. There are numerous rural dwellings and two elementary schools within the Plan Area. The community of Cantua Creek, near the center of the Plan Area, includes approximately 100 residences and the Cantua Elementary School, and represents the greatest concentration of sensitive receptors within the Plan Area.

4.3.3. Environmental Impact Analysis**METHODOLOGY**

This section analyzes the potential for implementation of the VCIP to result in significant environmental impacts related to air quality based on the air quality evaluation prepared for this PEIR by Illingworth & Rodkin (see Appendix B of this PEIR). The latest version of the California Emissions Estimator Model (CalEEMod) was used to identify and quantify criteria pollutant emissions from construction and operational sources. The results were compared to the significance thresholds established by SJVAPCD to determine the significance of potential impacts and to identify mitigation measures as appropriate. In addition, a Health Risk Assessment (HRA) was undertaken to determine the significance of potential health risks associated with VCIP implementation.

SIGNIFICANCE CRITERIA

Based on Appendix G of the state CEQA Guidelines, implementation of VCIP would be considered to result in a significant air quality impact if it would:

- a. Conflict with or obstruct implementation of the applicable air quality plan.
- b. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.
- c. Expose sensitive receptors to substantial pollutant concentrations.
- d. Result in other emissions (such as those leading to odors) affecting a substantial number of people.

SJVAPCD has developed the Guide for Assessing and Mitigating Air Quality Impacts (SJVAPCD 2015c), also known as the GAMAQI. Chapter 8 of the GAMAQI (Assessing Air Quality Impacts) sets forth the following thresholds of significance to determine whether a proposed project would result in a significant air quality impact under CEQA:

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- 1) Construction Emissions of PM. Construction projects are required to comply with SJVAPCD's Regulation VIII. However, the size of the project and the proximity to sensitive receptors may warrant additional measures, such as additional watering, wind fences, reduced equipment usage, etc.
- 2) Criteria Air Pollutant Emissions. SJVAPCD's adopted CEQA thresholds of significance for criteria pollutant emissions and their application are presented in Table 4.3-4 below⁹. These thresholds address both construction and operational emissions. Note that SJVAPCD treats permitted equipment and activities separately, as discussed under "Other SJVAPCD Rules" above. The potential VCIP projects would not be considered a source of sulfur dioxide (SO_x) emissions and would have relatively low CO emissions.
- 3) Ambient Air Quality. Emissions that are predicted to cause or contribute to a violation of an ambient air quality standard 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 after implementation of all mitigation measures.
- 4) Local CO Concentrations. CO is considered a localized air pollutant caused by large emissions in a localized area, such as busy roadway intersections. Construction equipment is not considered a substantial source of CO emissions; however, construction-related traffic would be considered a source of CO. Traffic emissions associated with the VCIP projects would be considered significant if the project contributes to CO concentrations at receptor locations in excess of an ambient air quality standard.
- 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 (MEI) would exceed 20 in 1 million or would result in a Hazard Index (HI) greater than 1 for non-cancer health effects.¹⁰ The HI represents the ratio of the predicted exposure to a recommended exposure limit, where an HI of greater than 1.0 indicates an unhealthy exposure.
- 6) Odors. Odor impacts associated with the potential VCIP projects would be considered significant if they have 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) Cumulative Impacts: With respect to cumulative air quality impacts, the GAMAQI provides that any single project that would individually have a significant air quality impact (i.e., exceed significance thresholds for ROG, NO_x, or PM₁₀) would also be considered to have a significant cumulative impact (SJVAPCD 2015c, 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 a given project's emissions to result in an exceedance of one or more significance thresholds for criteria pollutants (SJVAPCD 2015c, p. 108).

⁹ SJVAPCD significance thresholds for criteria air pollutant emissions are published on their website at <https://ww2.valleyair.org/media/m2ecyxiw/1-cms-format-ceqa-air-quality-thresholds-of-significance-criteria-pollutants.pdf>, accessed March 31, 2025. These are equivalent to those published in the GAMAQI (SJVAPCD 2015c).

¹⁰ SJVAPCD significance thresholds for toxic air contaminants are published on their website at <https://ww2.valleyair.org/media/2lpbkso0/2-cms-format-air-quality-thresholds-of-significance-toxic-air-contaminants.pdf>, accessed on March 31, 2025.

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TABLE 1.3-4
SJVAPCD CEQA THRESHOLDS OF SIGNIFICANCE FOR PROJECTS
[CRITERIA POLLUTANT EMISSION LEVELS IN TONS PER YEAR]

Pollutant/Precursor	Construction Emissions	Operational Emissions	
		Permitted Equipment and Activities	Non-Permitted Equipment and Activities
Carbon Monoxide (CO)	100	100	100
Nitrogen Oxides (NO _x)	10	10	10
Reactive Organic Gases	10	10	10
Sulfur Dioxide (SO _x)	27	27	27
Particulate Matter – PM ₁₀	15	15	15
Particulate Matter – PM _{2.5}	15	15	15

Source: SJVAPCD 2015a

4.3.3.1. DIRECT AND INDIRECT EFFECTS

Impact AQ-1. Conflict with Air Quality Plan

Implementation of the VCIP Energy Resource and Infrastructure Plans would not conflict with or obstruct implementation of an applicable air quality plan. (*Less-than-Significant Impact*)

SJVAPCD's guidance document for assessing and mitigating air quality impacts (GAMAQI) does not include methodologies for assessing the effect of a project on consistency with clean air plans developed by the SJVAPCD. However, regional clean air plans developed by SJVAPCD rely on local land use designations to develop population and travel projections that are the basis of future emissions inventories. Air pollution control plans are aimed at reducing these projected future emissions. Upon their completion, the energy resource and infrastructure projects planned under the VCIP would result in no new population growth and very minor employment growth. Thus, VCIP implementation would not alter long term population and vehicle related emissions projections contained in regional clean air planning efforts in any measurable way, and would not conflict with the control plans aimed at reducing these projected emissions. Therefore, implementation of the proposed VCIP 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, and the potential impact would be *less than significant*.

As discussed in Section 4.3.2. *Regulatory Context*, in 2005 the SJVAPCD adopted the ISR Rule 9510 to fulfill its emission reduction commitments in its PM₁₀ and Ozone attainment plans. SJVAPCD determined that implementation and compliance with the ISR Rule would reduce the cumulative PM₁₀ and NO_x impacts of growth anticipated in the air quality plans to a less-than-significant level. As discussed under Impact AQ-2 below, the {AM0011.1}

project proponent for each potential VCIP project will be required to file an application for ISR Review to confirm that the project will be consistent with emissions reduction requirements. The final emissions calculations for a project under the VCIP would be performed in an AIA, as required under the ISR Rule to determine whether and to what extent specific pollutant reductions would be required for the project through on-site and/or off-site measures. Upon implementation of ISR Rule emission reduction measures, each VCIP project would fulfill its share of achieving SJVAPCD's emission reduction commitments in the PM₁₀ and Ozone attainment plans. Therefore, the implementation of the VCIP Energy Resource and Infrastructure Plans would not conflict with or obstruct implementation of the applicable air quality plans and the potential impact would be *less than significant*.

Mitigation Measures: No mitigation is required.

Impact AQ-2. Cumulatively Considerable Net Increase in Any Criteria Pollutant

Implementation of the VCIP Energy Resource and Infrastructure Plans would increase emissions of criteria pollutants; however, any increases would be reduced to below the applicable SJVAPCD criteria pollutant offset thresholds by mitigation measures and would not be cumulatively considerable. (*Less-than-Significant Impact with Mitigation*)

SJVAPCD has developed criteria to determine if a development project could result in potentially significant regional emissions. According to Section 7.14 of the GAMAQI ("Result in a Cumulatively Considerable Net Increase of Any Criteria Pollutant?"), any proposed project that would individually have a significant air quality impact (i.e., exceed significance thresholds for ROG or NO_x) would also be considered to have a significant cumulative air quality impact. The GAMAQI further states that "a Lead Agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program, including, but not limited to an air quality attainment or maintenance plan that provides specific requirements that will avoid or substantially lessen the cumulative problem within the geographic area in which the project is located" (SJVAPCD 2015c, p. 66). SJVAPCD's attainment plans demonstrate that project specific emissions below SJVAPCD's Rule 2201 (New Source Review or NSR) offset thresholds for criteria pollutants will have a less than significant impact on air quality. Thus, SJVAPCD has determined that the use of its offset thresholds as thresholds of significance for criteria pollutants under CEQA Guidelines section 15064.7 is an appropriate and effective means of promoting consistency in significance determinations regarding stationary and non-stationary emissions sources (SJVAPCD 2015c, pp. 81-82). For local impacts of PM₁₀ from unrelated construction projects, the GAMAQI recommends a qualitative approach where construction activities from unrelated projects in the area should be examined to determine if enhanced dust suppression measures are necessary.

The proposed VCIP is a comprehensive master plan of development for solar PV generation projects and battery storage facilities, along with their supporting infrastructure of gen-tie lines, collection substations, and connecting transmission lines. The VCIP and this PEIR provide a plan for overall development at a conceptual land use scale but do not identify individual projects or provide project-level details of development, as this project-level information is not available and cannot be accurately forecasted. SJVAPCD's significance thresholds as identified in the GAMAQI would apply to each individual project proposed to be constructed under the VCIP. These {AM0011.1}

thresholds are not intended to be applied at the VCIP-wide level; they apply only to development projects on a case-by-case basis, depending on project size. All emissions of criteria pollutants would occur at the project level. However, to determine the overall air quality impacts from construction and operations resulting from the full buildout of the VCIP, estimates of overall emissions were computed.

Project-related air quality impacts fall into two categories: short-term impacts due to construction, and long-term impacts due to project operation. During construction, the potential VCIP projects would affect local particulate concentrations primarily due to fugitive dust sources and would contribute to ozone and PM₁₀/PM_{2.5} levels from exhaust emissions. Over the long term, the projects would result in an increase in emissions of ozone precursors ROG and NO_x, primarily due to increased motor vehicle trips (employee trips, truck deliveries, and on-site maintenance activities). The construction and operational emissions associated with the VCIP projects are discussed below.

VCIP Project Construction

VCIP implementation would consist of various types of projects, described above, constructed as discrete projects in various sizes. A CalEEMod model was developed to represent emissions from the VCIP projects planned to be developed in each year of VCIP buildout. The emissions computed using CalEEMod address the use of construction equipment (including helicopters), worker vehicle travel, on-site vehicle and truck use, and off-site truck travel by vendors and equipment/material deliveries. All commuting workers were conservatively assumed to be driving solo, whereas experience shows that utility-scale solar projects typically have a carpooling rate of 25-30 percent. In addition, substantial reductions in commuter traffic would occur through implementation of traffic mitigation measures such as the fleet of shuttle buses required to avoid congestion on area roadways (see Section 4.16. *Transportation*, Mitigation Measure TRA-1).

Annual construction emissions from buildout of the VCIP were based on the proposed construction schedule beginning in 2028/2029 (initial infrastructure improvements in 2028, with solar PV projects starting in 2029) and continuing through 2038.

Construction Dust

Construction activities would generate particulate dust and other pollutants, which would temporarily affect local air quality in the surrounding area. Grading and site disturbance (e.g., vehicle travel on exposed areas) would likely result in the greatest emissions of dust and PM₁₀/PM_{2.5}. Windy conditions during construction could cause substantial emissions of PM₁₀/PM_{2.5}.

To control dust emissions, the SJVAPCD emphasizes implementation of effective and comprehensive control measures. Regulation VIII essentially prohibits emission of visible dust (limited to 20-percent opacity) and requires that disturbed areas or soils be stabilized. Prior to construction, each project proponent would be required to submit a Dust Control Plan that meets Regulation VIII's requirements. As specified in Regulation VIII, Rule 8021 (Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities), a Dust Control Plan is subject to review and approval by SJVAPCD before any ground disturbing activity can begin. Regulation VIII and its constituent rules pertaining to construction activities generally require the following dust control measures:

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- 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 dirt on public roadways. Limit access to the construction sites, so tracking of mud or dirt on public roadways can be prevented. 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.

Implementation of an approved Dust Control Plan would reduce emissions by at least 80 percent with aggressive measures¹¹. Anyone who prepares or implements a Dust Control Plan must attend a training course conducted by the Air District (preparer is usually someone associated with the construction contractor who will implement the dust control measures). Construction sites are subject to SJVAPCD inspections under this Regulation VIII. Compliance with Regulation VIII, including the effective implementation of a Dust Control Plan that has been reviewed and approved by SJVAPCD, would reduce dust and PM₁₀ emissions to *less-than-significant* levels.

Construction Exhaust Emissions

Equipment and vehicle trips associated with construction would emit ozone precursor air pollutants on a temporary basis. Construction equipment would also emit DPM, which is a TAC, that can adversely affect local air quality. (See Impact AQ-3 below for a discussion of potential TAC impacts.)

Emissions of air pollutants that could affect regional air quality were addressed by modeling emissions and comparing them to the SJVAPCD significance thresholds. Construction period air pollutant emissions were estimated using the CalEEMod model. Emissions from all phases of construction are shown in Tables 4.3-5 below. The emissions calculations reflect unmitigated conditions, except for the dust component of PM₁₀ and PM_{2.5}, which are assumed in the calculations to be mitigated by dust control measures required under SJVAPCD Regulation VIII.

¹¹ Based on modeling of dust control measures using CalEEMod for a combination of control measures that include aggressive site watering, reduced vehicle speed, and use of dust palliatives.
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TABLE 4.3-5

TOTAL ANNUAL VCIP CONSTRUCTION CRITERIA AIR POLLUTANT EMISSIONS IN TONS PER YEAR

Construction Year	ROG	NO _x [*]	CO	Total PM ₁₀ ^{*,**}	Total PM _{2.5} ^{**}
2029	27.44	200.33	387.61	138.60	19.30
2030	24.39	193.71	374.71	137.93	18.60
2031	23.50	189.21	363.89	137.90	18.57
2032	22.55	181.98	353.09	137.89	18.32
2033	21.42	175.67	337.19	134.61	17.84
2034	18.74	156.66	300.67	121.00	16.07
2035	18.18	151.29	293.72	120.99	16.07
2036	17.80	147.84	287.16	120.77	16.06
2037	15.83	145.62	283.10	120.76	16.06
2038	8.16	74.84	146.15	61.17	8.19
Individual Project-Level Significance thresholds	10	10	100	15	15

* ISR requires reductions for NO_x and PM₁₀ that are not reflected in this assessment.

** Values reported for "PM₁₀ and PM_{2.5} include a combination of exhaust and fugitive dust, and reflect the effect of dust control measures implemented under Regulation VIII, but not reductions in exhaust emissions required under ISR.

Construction emissions were estimated based on the proposed construction schedules, and anticipated construction vehicle and equipment use for all VCIP projects including solar and energy storage facilities, substations, gen-tie lines and connecting transmission lines. The emissions estimated using CalEEMod address use of construction equipment, worker vehicle travel, on-site vehicle and truck use, off-site truck travel by vendors and equipment/material deliveries. Also included are the emissions from the use of a helicopter for installation of the gen-tie lines and transmission lines. Criteria air pollutant exhaust and fugitive dust (i.e., PM₁₀ and PM_{2.5}) were estimated using CalEEMod. (Note that the unmitigated CalEEMod modeling does not include the effects of SJVAPCD Regulation VIII that would substantially reduce fugitive PM₁₀ and PM_{2.5} emissions.) The air quality calculations are included as attachments to the Air Quality Assessment, which is contained in Appendix B of this PEIR.

As shown in Table 4.3-5, unmitigated construction emissions from the VCIP projects would exceed applicable Air District thresholds for all criteria pollutants during each year of construction. The table conservatively assumes that all commuting workers would be driving solo, whereas experience shows that utility-scale solar projects

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typically have a carpooling rate of 25-30 percent. In addition, substantial reductions in commuter traffic would occur through implementation of traffic mitigation measures such as the fleet of shuttle buses required to avoid congestion on area roadways (see Section 4.16. *Transportation*).

Emissions reported in Table 4.3-5 reflect those associated with buildout of the entire VCIP, which would involve numerous construction projects over a period of approximately 10 years. Thus, it would not be appropriate to apply the Air District's project-level CEQA thresholds to the annual unmitigated emissions provided in Table 4.3-5, since the thresholds only apply to individual projects and not to a series of projects constructed in a given year.¹² Individual VCIP projects could exceed the SJVAPCD CEQA significance thresholds for construction air quality impacts; however, application of dust emissions controls, as required by SJVAPCD, would be expected to reduce fugitive PM₁₀ emissions below the significance thresholds.

Experience shows that solar and battery energy storage system (BESS) projects of up to 300 MW that are constructed in one year result in emissions below the thresholds for all criteria pollutants with implementation of dust controls required under Regulation VIII (Kings County 2024, Fresno County 2024f). Thresholds for criteria pollutants could be exceeded at larger individual VCIP projects constructed in one year, although it is anticipated that the VCIP would include few if any projects larger than 300 MW constructed in one year. As provided in Section 2. *Project Description*, it is anticipated that the typical solar and BESS project would have a generating and storage capacity of 250 MW and occupy about 1,600 acres.

For any larger projects, additional reductions in emissions would be achieved through application of the SJVAPCD ISR Rule (Rule 9510), which applies to construction of projects with mitigated emissions above 2.0 tons per year (tpy) of NO_x or 2.0 tpy of PM₁₀. Regardless of whether a project's construction emissions of regional pollutants would exceed the Air District's CEQA significance thresholds for each pollutant, the project is still required to comply with Rule 9510 to ensure that the project contributes its fair share of emissions reductions to achieve the basin-wide reduction targets established in the Air District's Ozone and PM attainment plans. Rule 9510 requires that the project reduce uncontrolled construction exhaust emissions by 20 percent for NO_x and 45 percent for PM₁₀ from calculated unmitigated levels. The basis for the reductions is determined using the CalEEMod model. SJVAPCD encourages reductions through on-site mitigation measures. (Note: The use of the term "mitigation" under Rule 9510 does not refer to mitigation of impacts under CEQA; i.e., the ISR emission reduction percentages are required without regard to whether the CEQA emissions thresholds are exceeded or not.) Fees to purchase or sponsor off-site reductions through SJVAPCD apply when on-site mitigation measures do not achieve the required percentage of emissions reduction. Using less-polluting construction equipment, such as newer equipment or retrofitting older equipment reduces construction emissions on-site. A combination of on-site and off-site measures can be implemented to meet the overall emission reduction requirements. The uncontrolled emissions reported in Table 4.3-5 do not include the reductions required by Rule 9510.

Note that meeting the requirements of Rule 9510 does not necessarily mean that emissions would be reduced below the CEQA significance thresholds. In such cases, the project proponent and SJVAPCD would enter into a contractual agreement (i.e., Voluntary Emissions Reduction Agreement - VERA), under which the project proponent agrees to mitigate project-specific emissions (to below the Air District's thresholds) by providing funds to the

¹² While SJVAPCD's significance thresholds only apply to individual projects, they are a major component of SJVAPCD's attainment strategy as it relates to growth within the and are designed to ensure that numerous development projects do not result in cumulatively considerable impacts regarding nonattainment pollutants and their precursors (SJVAPCD 2015c, p. 81.)

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SJVAPCD. SJVAPCD administers the implementation of the VERA by identifying emissions reductions projects, funding those projects and verifying that emissions reductions have been successfully achieved. Types of emission reduction projects that have been funded in the past include using electric stationary internal combustion engines (such as agricultural irrigation pumps), replacing old heavy-duty trucks with new, cleaner, more efficient heavy-duty trucks, and replacing agricultural equipment with the latest generation technologies. The execution and implementation of VERAs can and, as necessary, would feasibly mitigate project-specific air quality impacts to less-than-significant levels under CEQA. VERAs are nominally voluntary. However, to meet CEQA's requirement to mitigate impacts to the extent feasible, in practice they must be executed and implemented when design elements, ISR Rule mitigation measures, and compliance with other SJVAPCD rules and regulations are not sufficient to reduce project-related impacts on air quality to a less-than-significant level (CEQA Guidelines Section 15126.4(a)).

The VCIP solar and BESS projects would be decommissioned at the end of their productive lives. The activities associated with deconstruction would be comparable to construction, but emissions are expected to be substantially lower given phasing of anticipated reductions in vehicle and equipment emissions pursuant to state and federal regulations, and also because of the generally lower intensity of equipment use associated with decommissioning. Thus, emissions during decommissioning are not expected to exceed SJVAPCD's significance thresholds for any criteria pollutants. With application of the Air District's dust control requirements, fugitive PM₁₀ emissions are likewise expected to be below the CEQA significance thresholds during decommissioning of potential VCIP projects.

Mitigation Measure AQ-1: Construction and Decommissioning Period Emissions Controls

To reduce potential emissions of criteria pollutants and their precursors for which the Plan Area is non-attainment during construction and decommissioning of individual VCIP projects, apply on- and off-site emissions reduction measures as required by the SJVAPCD.

Individual projects are subject to the ISR Rule, which would require reductions in emissions of NO_x and PM₁₀. Note that reductions in PM₁₀ would also reduce PM_{2.5} emissions. Measures to reduce on-site emissions may include the use of Tier 4 construction equipment that would reduce the on-site project emissions of NO_x by 32 percent during the early VCIP construction years and by 26 percent in later years when NO_x emissions are lower due to required emission control improvements in the construction vehicle fleet. Off-site vehicle travel also contributes to NO_x and particulate matter emissions during construction. Approximately 25 percent of commuting construction workers are expected to carpool based on experience at previous solar projects. Also, VCIP implementation will require substantial traffic mitigation, primarily in the form of a fleet of shuttle buses that would substantially reduce emissions from worker travel.

In summary, while the residual construction- and decommissioning-related emissions of ozone precursors and particulates (i.e., emissions below the CEQA thresholds after mitigation) may result in an insubstantial increase in criteria air pollutants, and therefore would have an insubstantial health effect (as described in Section 4.3.2. *Regulatory Context* under "Criteria Air Pollutants and Their Health Effects"), the overall impacts would not cause the health-based NAAQS or CAAQS to be violated. Therefore, the air quality impacts resulting from construction and decommissioning of VCIP projects, individually and collectively, would be reduced to *less-than-significant* with the implementation of MM AQ-1.

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VCIP Project Operations

Operational emissions from proposed VCIP projects would be generated primarily by traffic and maintenance equipment, which would result in emissions of criteria pollutants. Table 4.3-6, below, shows the incremental operational emissions from VCIP projects for all 10 years of buildout, plus emissions for 2039 which would be the first full year of operations for all VCIP projects. Operational emissions would consist of emissions from maintenance vehicles, off-road equipment usage, and worker and vendor vehicles.

TABLE 4.3-6**ANNUAL VCIP OPERATIONAL EMISSIONS IN TONS PER YEAR (UNMITIGATED)**

Operation Year	Cumulative Generation (MW)	ROG	NO _x	CO	PM ₁₀ [*]	PM _{2.5} [*]
2030	2,300	0.30	2.32	3.95	12.95	1.40
2031	4,600	0.59	4.56	7.79	25.90	2.80
2032	6,900	0.86	6.75	11.56	38.84	4.20
2033	9,200	1.14	8.88	15.27	51.77	5.59
2034	11,500	1.40	10.98	18.92	64.71	6.98
2035	13,600	1.64	12.87	22.21	76.51	8.24
2036	15,700	1.87	14.71	25.47	88.31	9.50
2037	17,800	2.10	16.54	28.71	100.10	10.76
2038	19,900	2.33	18.34	31.94	111.90	12.02
2039	21,000	2.43	19.21	33.56	118.08	12.68
<i>Individual Project Significance Thresholds</i>		<i>10</i>	<i>10</i>	<i>100²</i>	<i>15</i>	<i>15</i>

*Includes both exhaust and fugitive dust emissions.

As shown in Table 4.3-6, the Air District's thresholds for NO_x and PM₁₀ would be exceeded if the entire VCIP were a single project. However, to determine the significance of air quality impacts, the Air District would not consider the emissions from the entire development planned under the VCIP, but would apply the thresholds to the emissions of individual projects on an annual basis. As provided above, the Air District's thresholds are designed to achieve its attainment strategy as it relates to the substantial growth projected within the Air District and fundamentally consider the cumulative effects of multiple projects. The largest potential solar project within the

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VCIP (i.e., 1,150 MW based on transmission capacity) would be quite small compared to the total VCIP, i.e., would represent less than 5 percent of the total VCIP generation capacity, and would emit a proportional amount of criteria pollutants. Therefore, the annual operational emissions from an individual solar project in 2039 would be below the operational thresholds for each pollutant. Criteria pollutant emissions from individual VCIP projects would be below their applicable thresholds. Therefore, the operational air quality impacts from VCIP development would be *less than significant*.

Note that on-site travel and activity were assumed to occur on unpaved roadways. It is important for solar projects to minimize generation of dust that could settle on PV equipment and adversely affect the overall performance of solar modules. The potential VCIP solar and energy storage projects would have internal gravel roadways and compacted earth roadways that would be compacted to 95 percent compaction and treated with dust palliatives to minimize dust generation. Reduced traffic speeds would further reduce dust emissions.

Proposed VCIP projects would be subject to SJVAPCD's ISR Rule 9510 to reduce NO_x and PM₁₀ emissions. The emissions in Table 4.3-6 do not reflect any reductions that would be required under ISR.

Stationary combustion equipment, like standby generators, which could emit air pollution during facility operation, are not anticipated to be utilized for VCIP projects. Photovoltaic energy projects do not typically include standby generators but rely on standby batteries for temporary power supply in the event of power outage on the local electricity distribution system. Any standby emergency generator (rated 50 horsepower or greater) would require a permit from SJVAPCD, but their use in VCIP projects is not foreseen. Sources of stationary air pollutant emissions that comply with all applicable SJVAPCD regulations generally are not considered to have a significant air quality impact for CEQA purposes.

In summary, the emissions of criteria pollutants from operation of VCIP projects, individually and collectively, would result in a *less-than-significant impact* to air quality.

Mitigation Measures: No mitigation is required.

Comparison of VCIP Emissions with Emissions from Existing Agricultural Activities

The following comparison of VCIP emissions with emissions from existing agricultural activities is provided for informational purposes and is not part of the CEQA analysis of air quality impacts.

The VCIP would essentially utilize land that is currently active for agricultural purposes. Farming operations generate existing emissions of dust and combustion-generated air pollutants. Dust emissions are generated primarily by ground disturbances from tilling, harvesting, and vehicle travel over unpaved surfaces. ROG emissions are primarily from the application of fertilizers and pesticides. NO_x emissions are primarily from the operation of farm equipment that include tractors and harvesters. There are emissions from truck traffic used to export farm products and service the farmlands, as well as the workforce traffic.

VCIP implementation would develop energy and infrastructure projects on about 136,000 acres in Fresno County. In 2024 approximately 53,044 acres of this total were actively farmed for row and field crops, tree crops, and vines, and approximately 81,357 acres were fallowed (the remaining 1,599 acres are mapped as natural or {AM0011.1})

developed/roads)(see Section 4.4. *Biological Resources*, Table 4.4-1). Agricultural activities such as discing and weed control occur on fallowed lands. Thus, there are agriculturally related emissions associated with both actively farmed and fallowed lands, although a wider range of activities that result in emissions occurs on actively farmed lands (e.g., harvesting, irrigation, pest control). Altogether, these agriculturally related activities result in emissions of particulate matter (PM₁₀ and PM_{2.5}) from tilling, discing, and other soil preparation; pruning; harvesting; vehicle travel on unpaved farm roads; and wind erosion. They also result in NO_x and VOC emissions associated with the use of diesel fuel in tractors, sprayers, and irrigation pumps, as well as the use of pesticides and herbicides. Approximate agricultural emissions associated with these existing uses were calculated for informational purposes.

CARB Inventory Estimates

CARB reports annual emissions for Fresno County. The California Emissions Inventory Data Analysis and Reporting System (CEIDARS) is a database management system developed to track statewide criteria pollutant emissions (CARB 2025h). The database is divided into reporting years and stores discrete information for stationary, areawide, mobile, and natural sources. This inventory for Fresno County was used to compute emissions per acre per year and apply these rates to the VCIP. The emissions calculations used the 2025 emissions year.

Emissions were based on dust generation, fertilizer and pesticide applications, and farm equipment use. There would be on-road traffic associated with farming operations but CEIDARS does not separate agricultural traffic from overall county traffic. Therefore, the emissions estimated for agricultural activities only include on-site farming emissions and do not include farm-generated traffic on public roads (i.e., truck and worker traffic). Table AQ-4.3-7 shows annual emission rates per acre of criteria pollutants for agricultural activities, VCIP project construction, and VCIP facility operation. It is noted that the VCIP emission rates include emissions from on-road traffic generation whereas on-road traffic generated by agricultural activities is not included in the emissions estimates for the reasons stated above. This results in a minor underestimate of existing agricultural emissions. It is also noted that agricultural activities generally do not include dust controls, while VCIP project construction and operations would include dust controls.

TABLE 4.3-7

**COMPARISON OF ANNUAL EMISSIONS FROM VCIP AND EXISTING AGRICULTURAL ACTIVITIES
(IN TONS PER ACRE PER YEAR)**

Activity	ROG	NO _x	CO	PM ₁₀	PM _{2.5}
Agricultural Activity*	0.002	0.004	0.002	0.006	0.001
VCIP Project Construction**	0.012	0.086	0.166	0.059	0.008
VCIP Facility Operations**	0.00002	0.00014	0.0025	0.0087	0.0001

* No dust controls.

** With dust controls. (Note: With controls, the dust component comprises approximately 20% of the PM₁₀ and PM_{2.5} of VCIP project construction emissions totals reported in the table.)

Source: Illingworth & Rodkin 2025

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As shown in Table 4.3-7, annual emissions for VCIP construction would be greater than annual emissions per acre of agricultural activity, with VCIP construction resulting in 7 to 87 times greater emissions than agricultural activity depending on the pollutant. During construction, dust generation by VCIP project construction would be approximately double the agricultural dust generation rate per acre. However, once the construction of VCIP projects is completed and the VCIP facilities are fully operational, agricultural emissions would be substantially greater than VCIP operational emissions, as further illustrated in Table 4.3-8.

The calculations of agricultural emissions in Table 4.3-8 apply the full per-acre emissions factor from Table 4.3-7 to the approximately 53,044 acres in agricultural production, and apply only the emissions factor for tilling twice per year on the approximately 81,357 acres of fallowed land in the DFAs. (As noted, the remaining 1,599 acres are mapped as natural or developed/roads.) As shown in Table 4.3-8, the fully operational VCIP solar/BESS facilities would result in an approximately 77 to 95 percent reduction in emissions, depending the pollutant, compared to continued agricultural operations and fallowing over the same acreage. Dust generation during VCIP project operations would be approximately 85 percent (PM₁₀) to 98 percent (PM_{2.5}) lower than corresponding agricultural dust emissions on a per acre basis.

TABLE 4.3-8
COMPARISON OF ANNUAL EMISSIONS FROM VCIP AND EXISTING AGRICULTURAL ACTIVITIES
(IN TONS PER YEAR)

Activity	ROG	NO _x	CO	PM ₁₀	PM _{2.5}
<u>VCIP Project Construction/ Decommissioning Emissions*</u> (Average annual emissions during 10 years of VCIP construction and 10 years of VCIP decommissioning)	19.7	174.4	311.2	121.7	16.4
<u>VCIP Facility Operations Emissions*</u> (Total annual emissions at full VCIP buildout over 136,000 acres of DFAs)	2.4	19.2	33.6	118.1	12.7
<u>Agricultural Emissions**</u> (Total annual emissions from 136,000 acres of DFAs as farmland)	94.2	99.4	196.4	510.8	75.8
Total annual reduction in emissions during full VCIP Operation (Tons)	-91.8	-80.2	-162.8	-392.7	-63.1
Total annual reduction in emissions during full VCIP Operation (Percent)	-94.7%	-80.7%	-82.9%	-76.9%	-83.3%

* With dust controls.

** No dust controls. Includes all emissions from cultivated lands and dust emissions from discing of fallowed lands.

Source: Illingworth & Rodkin 2025

For a presentation of year-by-year reductions in overall emissions during the VCIP buildout period, see Appendix B, Table 11. If emissions from off-site vehicular operation associated with agricultural production is taken into account, the relative agricultural emissions would be greater still, although there is no data to quantify how much {AM0011.1}

greater those emissions would be. In sum, during the combined 20-year period of construction and decommissioning, emissions associated with the proposed VCIP would be substantially greater than existing agricultural emissions during those years. However, the VCIP's greater emissions during these years would be far outweighed by the 35 years where VCIP operations would result in substantially lower emissions than agriculture in each of those years. Thus, it can be concluded that, when all phases of VCIP implementation are considered (i.e., construction, operation, and decommissioning), the lifetime emissions from VCIP implementation would result in a substantial reduction in emissions compared agricultural operations on the same land area over the same period of time.

Based on the analysis above, it is concluded that overall emissions from the continuation of existing agricultural activities on the 136,000-acres of VCIP DFAs would be substantially greater than emissions from full VCIP implementation of all VCIP phases over the same land area. Thus, the substantially lower level of emissions resulting from VCIP implementation relative to the alternative of continued agricultural use of the same land area represents a substantial environmental benefit of VCIP implementation.

Dust Generation on Fallowed Land

In addition to considering overall emissions from agricultural activities, it is worth considering the specific effects of dust generated by agriculture, and by land fallowing in particular. A 2025 article in the online journal "Communications Earth and Environment" reported on the investigation into dust generation from fallowed land in the Central Valley of California (Adebisi, A., et al. 2025). The main findings and conclusions of the study are summarized here. The study found a regional-scale relationship between the expansion of fallowed agricultural lands that has occurred in the Central Valley in recent years and increased windblown dust in the region. In addition to dust generated from agricultural cultivation and harvesting, unplanted plots of agricultural land leave soils exposed and susceptible to wind erosion. Under drought conditions, the combination of reduced soil moisture and higher surface temperatures reduces adhesion between soil particles and results in lower resistance to wind erosion. The increase in windblown dust has implications for public health since increased dust increases exposure to Valley Fever, and exacerbates respiratory diseases like asthma and cardiovascular diseases. The resulting public health impacts affect disadvantaged communities and farm workers in the Central Valley. In addition to exacerbating already poor air quality, increased dust in the atmosphere absorbs radiation which can exacerbate heat waves, and dust deposited in the Sierra can accelerate snow melting. Under conditions of strong winds and increased soil erodibility, there is expected to be an increase in substantial dust storms that can result in severely reduced visibility.

The study also noted that the implementation of the Sustainable Groundwater Management Act (SGMA) will result in substantial removal of additional agricultural land from irrigation, increasing the acreage that would be fallowed. The study stated that unless land fallowed under SGMA is not transitioned to land uses like renewable energy, or unless intentional efforts to reduce anthropogenic dust emissions by inhibiting windborne soil erodibility are implemented (e.g., landscape restoration and covercropping), the adverse effects of dust generation would be further magnified as a result of SGMA implementation (Adebisi, A., et al. 2025). The findings of this study further highlight the importance of repurposing fallowed land to solar use within the VCIP Plan Area. The implementation of MM AG-1, which requires VCIP solar/BESS facilities to implement vegetation and soil management plans throughout each facility's operational life, would provide an effective way to stabilize the soils at the VCIP facilities and help reduce overall potential for dust generation and the adverse health effects associated with it.

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Impact AQ-3. Exposure of Sensitive Receptors to Substantial Pollutant Concentrations

Implementation of the VCIP Energy Resource and Infrastructure Plans would not expose sensitive receptors to substantial pollutant concentrations. (*Less-than-Significant Impact*)

“Sensitive receptors” are defined as facilities where sensitive population groups, such as children, the elderly, and the acutely and chronically ill, are likely to be located. These land uses include residences, schools, playgrounds, childcare centers, retirement homes, convalescent homes, hospitals, and medical clinics. There are numerous rural dwellings dispersed throughout the Plan Area, with few small rural communities where residences are more concentrated. There are two elementary schools within the Plan Area, one in Cantua Creek and the other in Westside. There are no medical facilities, or retirement or convalescent homes within or near the DFAs of the Plan Area. The greatest concentration of sensitive receptors in the Plan Area is in the community of Cantua Creek, near the center of the Plan Area, which includes approximately 100 residences and the Cantua Elementary School. As illustrated in Appendix B, Figure 2 of this PEIR, VCIP implementation could involve construction of three DFAs adjacent and near the Cantua Creek community, with a potential gen-tie line segment running approximately 1,400 feet west of the nearest sensitive receptors in the community.

The two main types of pollutants that can occur in high, localized concentrations include CO from vehicular emissions and TACs from diesel exhaust. Other pollutants, such as Pb and SO₂ would not be appreciably emitted by the VCIP projects, and air quality standards for these pollutants are being met throughout the San Joaquin Valley Air Basin. The potential for VCIP projects to result in substantial concentrations of CO or TACs is discussed below.

Carbon Monoxide

Carbon monoxide is a localized air pollutant, where the highest concentrations are found very near sources. Since the major source of carbon monoxide (CO) is automobile traffic, elevated concentrations of CO occur near areas of high traffic volume and congestion. Emissions and ambient concentrations of CO have decreased greatly over the past 30 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 20 years. The San Joaquin Valley Air Basin has attained the CAAQS and NAAQS. This is demonstrated by monitoring data that includes monitoring stations in heavily urbanized areas with large traffic volumes.

Despite this progress, localized CO concentrations are addressed through SJVAPCD’s recommended screening method, which is based on the CO Protocol Analysis developed by the California Department of Transportation (CalTrans) (SJVAPCD 2015c, p. 98). A project has no potential to violate SJVAPCD’s CO standard if neither of the following criteria are met: 1) the level of service (LOS) on one or more streets or intersections would be reduced to LOS E or F by the project; and 2) the project would substantially worsen the LOS at a street or intersection in the vicinity operating at LOS F under pre-project conditions.¹³

Most CO emissions from VCIP projects would occur from traffic generated during construction, but these emissions would be temporary at any one location. As discussed in Section 4.16. *Transportation*, the Traffic Study

¹³ As provided in Section 4.16. *Transportation*, LOS E occurs when traffic demand approaches roadway capacity and speeds are seriously curtailed, whereas LOS F occurs when demand exceeds capacity and heavy congestion exists with unstable traffic flow.

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contained in Appendix E of this PEIR indicates that during the construction period all roadways and intersections affected by VCIP traffic would operate at LOS C or better with the implementation of traffic mitigation measures identified in MM TR-1. Potential VCIP projects would be located in rural areas that do not have large volumes of ambient traffic capable of causing or contributing to violations of ambient air quality standards for CO. Therefore, SJVAPCD's CO screening thresholds would be met during the VCIP construction period.

Table 4.3-6 shows that upon full operation of the VCIP facilities, the overall CO emissions would be well below the applicable CO threshold. On an individual project basis, the emissions would be substantially lower than shown in the table. During operation, the typical 250-MW VCIP solar + BESS project would generate approximately 30 vehicle trips per day, on average. Thus, the small volume of operational traffic associated with the VCIP facilities at full buildout would have a negligible effect on CO concentrations along roadways providing access to the facilities. As discussed in Section 4.16. *Transportation*, the Traffic Study (Appendix E of this PEIR) indicates that LOS at intersections and roadways would not change from baseline conditions during full operation of VCIP facilities. Thus, the SJVAPCD CO screening criteria would be met for VCIP operations.

In summary, the construction and operation of VCIP projects would not result in a violation of the CO standard, individually or collectively. Therefore, implementation of the VCIP energy and infrastructure projects would result in a *less-than-significant impact* in terms of exposing sensitive receptors to substantial concentrations of CO.

Toxic Air Contaminants

The TAC that is relevant to the implementation of VCIP is DPM, which would be emitted by: diesel-fueled equipment and vehicles during construction; diesel-fueled vehicles used during project operations including worker vehicles, delivery trucks, and maintenance vehicles; and construction equipment and vehicles employed during decommissioning.

The highest daily levels of DPM would be emitted during construction and decommissioning activities by heavy-duty diesel equipment such as graders, excavators, loaders, and diesel-fueled haul trucks. However, these emissions would be intermittent, would vary throughout a particular project site, and would be temporary in duration (approximately 12-months of total construction activity for any project, and less for decommissioning). During project operations, low-level DPM emissions would result from worker vehicles and maintenance activities, but they would be constant over the lifetime of the project. Operational DPM emissions would mainly result from the use of pickup trucks with a portable water trailer (and pump) that would be used for panel cleaning.

The location with the greatest concentration of sensitive receptors is the community of Cantua Creek, which has the largest population of any unincorporated community with the Plan Area, and also includes the Cantua Elementary School. Since several DFAs are planned in the immediate vicinity of Cantua Creek, the community was identified as the location to perform the HRA to predict the cancer risk and non-cancer health hazards associated with construction of potential VCIP projects in the vicinity (the HRA is included in Appendix B of this PEIR at pages 29-33 and is based on the modeling data contained in Appendix B, Attachment 2). The HRA was performed by Illingworth & Rodkin who conducted dispersion modeling of both project construction activity and construction truck deliveries to calculate DPM and other TAC concentrations at the sensitive receptor locations within Cantua Creek.

The dispersion modeling was used to compute the total increased cancer risk on the maximally exposed individual (MEI). The increased cancer risk for the MEI from project construction, operations, and

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decommissioning was calculated to be 2.26 in one million, which is well below the Air District's significance threshold of 20 in one million. (It is noted that the HRA assumes lifetime (70-year) exposure to operational DPM emissions, whereas actual exposure would be about 35 years (i.e., the operating life of the solar/BESS project nearest to a given sensitive receptor); therefore, the calculated cancer risk is slightly overestimated.) Application of the non-cancer Health Index (HI) found that the chronic HI from DPM would be less than 0.1 at all receptor locations, well below the CEQA threshold of 1.0. (See Appendix B of this PEIR for a detailed discussion of methods and results of the dispersion modelling.)

Since the results of the HRA for Cantua Creek represent the VCIP's maximum potential to expose sensitive receptors to pollutant concentrations during buildout and operation, potential projects elsewhere in the Plan Area would result in similar or lower levels of health risk. Therefore, the health impacts associated with exposure to DPM from VCIP project construction and operation are not anticipated to be significant. Implementation of the VCIP energy and infrastructure projects, individually and collectively, would result in a *less-than-significant impact* in terms of exposing sensitive receptors to substantial concentrations of TACs.

Mitigation Measures: No mitigation is required.

Impact AQ-4. Other Emissions (such as Odors) Adversely Affecting a Substantial Number of People

Implementation of the VCIP Energy Resource and Infrastructure Plans would not result in other emissions (such as those leading to odors) that would adversely affect a substantial number of people. (*Less-than-Significant Impact*)

During construction of proposed VCIP projects, the operation of various diesel-powered vehicles and equipment would create localized odors. These odors would be temporary and would dissipate relatively quickly and thus would not likely be noticeable for extended periods of time beyond the boundaries of the particular project site. Most if not all diesel odors would be diluted in the air and disperse into the atmosphere before reaching the nearest sensitive receptors. Implementation of the VCIP Energy Resource and Infrastructure Plans would not result in other emissions, including emissions leading to odors, which would adversely affect a substantial number of people; therefore, the impact would be *less than significant*.

Mitigation Measures: No mitigation is required.

4.3.3.2. TRANSMISSION CORRIDORS OUTSIDE THE VCIP

The transmission corridors for delivery of solar generation from potential VCIP projects to urban electricity markets in northern and southern California have been identified at a conceptual level in this PEIR to allow a general discussion of environmental impacts associated with transmission line development for informational

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purposes. These transmission delivery corridors extend far beyond the District's boundaries and are not part of the proposed VCIP. Planning and approval of these outside transmission lines are under the jurisdiction of the state and federal energy regulatory agencies, public utilities, and cities and counties traversed by the transmission corridors. The following discussion provides an overview of potential impacts of the outside transmission lines with respect to air quality.

The outside transmission corridors would include a total of approximately 549 miles of transmission line in four Air Basins where air emissions are regulated by five air quality management districts. Approximately, 436 miles of transmission line would be under the SJVAPCD's jurisdiction, and the remaining 113 miles would be divided among four air districts including the Monterey Bay Air Resources District (MBARD) (55 miles), the Bay Area Air Quality Management District (BAAQMD) (5 miles), the East Kern Air Pollution Control District (EKAPCD) (25 miles), and the Antelope Valley Air Quality Management District (AVAQMD) (28 miles).

The six outside transmission lines would be constructed as separate projects, with the longest transmission line project extending 177 miles from the VCIP Substation 5 south to the Vincent Substation in northern Los Angeles County. Approximately 126 miles of this transmission line would be within the SJVAPCD, with the remaining 51 miles within EKAPCD and AVAQMD. It is likely that annual emissions during construction would exceed the Air District's thresholds for one or more criteria pollutants (e.g., NO_x and PM₁₀). The fugitive dust emissions would be mitigated through implementation of dust control measures required in SJVAPCD Regulation VIII, and exhaust emissions would be mitigated through use of Tier 4 construction equipment. Each project's compliance with ISR would provide substantial additional reductions in emissions, and the execution of a VERA would reduce emissions of pollutants that remain above thresholds after ISR implementation to less-than-significant levels. This would also apply to other outside transmission projects within the San Joaquin Valley Air Basin. For projects that are partially within other air districts, the lengths of transmission line to be constructed within those districts would be substantially shorter, as noted above, so the emissions associated with construction of those segments would also be lower. In all cases, the air districts have dust control regulations and requirements to prepare and implement fugitive dust control plans similar to the requirements of the SJVAPCD. The air districts would also impose measures to reduce construction exhaust emissions, which in combination with the relatively small quantities of emissions generated by these short transmission segments, would keep overall emissions to below the applicable thresholds within those segments. Adherence to applicable emissions thresholds would make these projects consistent with all applicable air quality plans.

The outside transmission projects would also result in the emission of toxic air contaminants (TACs) from diesel construction equipment. There are numerous sensitive receptors in the vicinity of the transmission corridors, primarily rural residences where occupants would be subject to emissions of diesel particulate matter (DPM) which has potentially adverse health effects. However, given that transmission construction would proceed rapidly along the corridors, the duration of construction activity at any location would be very short. As such, the exposure of individuals to TACs would be brief and would result in lifetime exposures that would be far below applicable thresholds for new cancer cases. Therefore, the construction of the outside transmission lines would not result in a significant health hazard due to diesel particulate emissions.

Regarding odors, the operation of various diesel-powered vehicles and equipment during transmission line construction would create localized odors. These odors would be temporary and would dissipate relatively quickly and thus would not likely be noticeable for extended periods of time at receptors in the vicinity. There would be no other emissions sources associated with the transmission projects.

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4.3.3.3. CUMULATIVE IMPACTS

With respect to regional air quality, the SJVAPCD guidance (GAMAQI) states that any project that would individually have a significant impact on regional air quality (i.e., exceed significance thresholds for ROG or NO_x) would also be considered to have a significant cumulative air quality impact. As discussed under Impact AQ-2, the emissions of ozone precursor pollutants (ROG and NO_x) and PM₁₀ from individual VCIP projects would be less-than-significant with mitigation. GAMAQI also states: “[a] Lead Agency may determine that a project’s incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program, including, but not limited to an air quality attainment or maintenance plan that provides specific requirements that will avoid or substantially lessen the cumulative problem within the geographic area in which the project is located” (SJVAPCD 2015c, p. 66). As discussed under Impact AQ-1, each individual VCIP project would fulfill its share of achieving the Air District’s emission reduction commitments in its PM₁₀ and Ozone attainment plans through its obligation to implement emission reduction measures under the Air District’s ISR (Rule 9510). Therefore, the individual VCIP projects would fully comply with the applicable air quality plans and would not conflict with or obstruct their implementation. Since each VCIP project would comply with the applicable air quality plans, overall implementation of the VCIP Energy Resource and Infrastructure Plans would also comply with the applicable air quality plans. Therefore, the cumulative regional air quality impacts of VCIP implementation would *not be significant* and the contribution from VCIP projects, individually and collectively, *would not be considerable*.

Relevant local air pollutants would include PM₁₀ emissions and TACs from construction activity. Construction period PM₁₀ emissions would be localized. As discussed under Impact AQ-2, the combined construction exhaust and dust emissions from each individual VCIP project would be less than the PM₁₀ significance threshold of 15 tons with mitigation (i.e., dust controls and other emission controls). Since the total PM₁₀ emissions would be below the total PM₁₀ significance threshold for each project, construction period total PM₁₀ emissions impacts would be less than significant for the overall implementation of the proposed VCIP.

In evaluating cumulative PM₁₀ emissions, only those approved and pending projects in the immediate project vicinity are considered because PM₁₀ concentrations disperse rapidly from the source. Immediately adjacent to DFAs, there are three projects that have been approved or are pending approval but have not yet been constructed. These include the approved Luna Valley and Sonrisa solar projects, and the pending Heartland Solar Project, all of which are located adjacent to DFAs along SR-33 between W. American and W. Manning Avenues. For each of those projects, the construction emissions for all criteria pollutants, including PM₁₀, were calculated to be below the Air District’s thresholds, and operational emissions would be very low. It is anticipated that the potential VCIP solar projects in this area would commence construction in 2030 at the earliest. The three non-VCIP solar projects in the vicinity would likely be constructed and fully operational by 2030, so it is unlikely that the construction of the VCIP projects would overlap with the construction of these non-VCIP solar projects. There are no other current or foreseeable projects in the vicinity of VCIP DFAs which would be under construction at the same time as the potential VCIP projects. In the unlikely event that the construction of the VCIP projects were to overlap with any other nearby projects, the combined PM₁₀ concentrations at the nearest common receptors would be negligible. This is because there are no other cumulative projects that are within one mile of both a DFA and a sensitive receptor, and because PM₁₀ concentrations disperse rapidly from the source and would be negligible at that distance. Therefore, the cumulative PM₁₀ impact associated with the VCIP projects would be *less-than-significant*, and the contribution of VCIP projects, individually and collectively, to cumulative PM₁₀ emissions *would not be considerable*.

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With respect to cumulative emissions of TACs, it is important to note that Diesel Particulate Matter (DPM) concentrations diminish rapidly from the source. Pollutant dispersion studies by CARB have shown that there is about a 70 percent drop-off in DPM concentrations at approximately 500 feet from the source (BAAQMD 2017, p. 8-7). This is reflected in the screening tables prepared by the Bay Area Air Quality Management District (BAAQMD) to determine distances where TAC exposures would be reduced to less than significant levels. For the largest construction projects, the recommended distance is up to 1,000 feet from the sensitive receptor location (BAAQMD 2010, p. 9). Thus, multiple sources of DPM emissions must all be proximate to a receptor to have a significant additive effect to DPM concentrations at the receptor site. As discussed under Impact AQ-3, the most affected sensitive receptors to VCIP project development would be subject to increased cancer risk of approximately 2.26 cases in one million from project construction, operation and decommissioning. All other sensitive receptors in the Plan Area would be subject to lower levels of DPM exposure.

SJVAPCD's TAC significance criterion for an individual project is an increase in cancer risk of more than 20 new cancer cases per million persons as measured over a 70-year lifetime for the maximally exposed individual (SJVAPCD 2015b). For context, it is noted that the lifetime cancer risk to the population from all sources is approximately 250,000 cases per million (or 1 case per 4 individuals) (SJVAPCD 2015c, p. 100). The 20 per million significance criterion is applied to individual projects where there is a potential for a significant health impact to nearby sensitive receptors. This same significance threshold is applied by SJVAPCD for cumulative TAC impacts, although the Air District considers it to be stringent (SJVAPCD 2015c, p. 110; SJVAPCD 2015b).

At the location of the maximally exposed individuals in Cantua Creek, there are currently no pending or approved projects within at least one mile of the community. As such, there are no sources of TACs in the vicinity which could combine with VCIP project TACs and result in a cumulatively greater cancer risk than estimated for the VCIP projects above. Similarly, there are no locations elsewhere in the Plan Area or immediately adjacent area where the sensitive receptors would be subject to TACs from VCIP projects and other approved and pending projects within one mile of the receptor location. As such, there would be no cumulatively considerable increase in cancer risk anywhere in the Plan Area or immediately adjacent areas. Therefore, the cancer risk of up to 2.26 cases per million estimated for Cantua Creek as a result of VCIP project development would also represent the cumulatively greatest cancer risk. Since this cancer risk is well below the significance threshold of 20 cases per million, the cumulative health risk impact associated with the VCIP implementation would be *less than significant*, and the VCIP's contribution to the cumulative health risk impact would *not be considerable*.

Regarding odors, the operation of various diesel-powered vehicles and equipment during construction would create localized odors. These odors would be temporary and would dissipate relatively quickly and thus would not likely be noticeable for extended periods of time beyond the boundaries of the cumulative projects. Most if not all diesel odors carried off-site would disperse into the atmosphere before reaching the nearest sensitive receptors. As discussed above for TACs, there are no locations in the Plan Area or immediately adjacent areas where any sensitive receptors would be subject to odors from VCIP projects and other approved and pending projects within one mile of the receptor location. Therefore, the potential for cumulative odor impacts to occur with VCIP implementation would be *less than significant*, and the VCIP's contribution to the cumulative odor impact would *not be considerable*.

The outside transmission lines would result in emissions during construction, which would be reduced to less-than-significant levels on an individual project basis through implementation of dust and exhaust emissions controls required by the applicable air quality management districts. Since the transmission corridors pass

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through rural areas, the cumulative development would mainly consist of dispersed residential development pursuant to general plan and zoning regulations of each affected county. The emissions from this cumulative development would be minor and would not combine with the emissions from transmission line construction to result in significant cumulative air quality impacts.

In summary, the less-than-significant air quality impacts associated with VCIP implementation, combined with the less-than-significant air quality impacts of the other cumulative projects, would not result in a cumulatively significant impact. Therefore, the *cumulative impact would be less than significant*, and the *contribution from VCIP projects would not be cumulatively considerable*.

4.3.4. References – Air Quality

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4.4. BIOLOGICAL RESOURCES

This section includes the following discussion and analysis related to biological resources: existing environmental setting; regulatory context; criteria and methodology for evaluating impacts; and the results of the impact assessment, including identification of potentially significant impacts and corresponding mitigation measures to avoid or substantially lessen such impacts to the extent feasible.

PEIR Scoping Comments

During the PEIR scoping process, the District received two letters containing comments regarding biological resources (see PEIR Scoping Report in Appendix A of this document). The comments that are relevant to this PEIR under CEQA are summarized below.

U.S. Army Corps of Engineers

The comment letter from the Corps of Engineers states that the Corps has jurisdiction within the study area for waters of the United States, including the riverine habitat comprising Panoche, Cantua, and Los Gatos Creeks. The applicant should prepare an aquatic resources delineation and obtain authorization from the Corps prior to starting work on projects that would potentially result in discharges of dredged or fill material into waters of the United States. Every effort should be made to avoid filling waters of the United States. If waters of the United States are to be impacted, evaluation of cultural resources within the defined federal permit area and compliance with the federal Endangered Species Act will be required.

Defenders of Wildlife

The comment letter identifies species of concern and recommends biological surveys, evaluation of impacts and mitigation measures, including impacts to connectivity corridors, potential for “lake effects” on migratory birds caused by reflected polarized light, and cumulative impacts. The comment letter also suggests that the PEIR address the proposed VCIP’s effects on water supplies for endangered fish and wildlife.

California Department of Fish and Wildlife (CDFW)

The comment letter from CDFW states that special-status species must be considered, including the federally endangered and state threatened San Joaquin kit fox, the state threatened Swainson’s hawk, and the state species of special concern burrowing owl. Each project applicant is responsible for ensuring that implementation of their project does not result in violation of the Migratory Bird Treaty Act or relevant Fish and Game Code sections. To evaluate future project-related impacts on nesting birds, CDFW recommends that a qualified biologist conduct an assessment of nesting habitat during biological surveys in support of each project’s CEQA document and then conduct pre-activity surveys for active nests prior to construction, with follow-up monitoring as needed. To address Plan-wide impacts, CDFW recommends that the PEIR include a cumulative impact analysis of all biological resources that may be subject to significant impacts.

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Grasslands Water District (GWD)

After the close of the NOP comment period on the VCIP PEIR, the District received a comment letter from GWD. The letter contained comments on a Draft Supplemental EIR on another project outside the District – the Las Camas Solar Project located near the junction of Interstate 5 (I-5) and State Route (SR) SR-152 in Merced County. GWD submitted the comment letter to the District to convey its concerns regarding potential impacts of VCIP implementation on migrating birds, including the potential effects of nighttime lighting and potential “lake effect” of large solar facilities.

4.4.1. Environmental Setting

Study Methodology

The discussion in this section is based on the biological evaluation report prepared for the proposed VCIP by Live Oak Associates (LOA) in May 2025. The LOA report is contained in Appendix C of this PEIR, and its findings and recommendations are summarized in this section.

Sources of information used in the LOA report included: 1) the *California Natural Diversity Data Base* (CDFW 2024); 2) the *Online Inventory of Rare and Endangered Vascular Plants of California* (California Native Plant Society [CNPS] 2024); and 3) manuals, reports, and references related to plan area and animals of the San Joaquin Valley region. The District’s 2024 Cropland Data Layer, based upon the District’s 2024 Crop Report, was used to generate maps and analysis for the Plan Area. The 2024 Cropland Data Layer represents the best available information regarding potential habitat types within the Plan Area and the Development Focus Areas (DFAs). These data were combined with the United States Department of Agriculture’s [USDA] *Land Cover Database* to generate a land cover map that extended 10 miles from the Plan Area (see Figure 4.4-1). LOA ecologists conducted a field survey of the Plan Area in July 2024 to confirm general habitat conditions on-the-ground as mapped. This reconnaissance survey also identified the principal land uses and the potential for special-status plant and animal species as well as sensitive habitats to occur within the Plan Area.

The level of effort undertaken during LOA’s desktop mapping and field surveys was sufficient to locate and establish the general extent of special-status species habitat that might be present under an existing conditions baseline, but was not sufficient to establish the extent of actual use of onsite habitats by special-status species that may be present.¹ These efforts were sufficient to provide the basis for assessing the significance of potential biological impacts associated with implementation of the proposed VCIP over the 136,000-acre DFAs within the 535,000-acre Plan Area, and to assess the need for more detailed studies at the project-level regarding sensitive biotic resources identified in this programmatic assessment.

¹ An existing conditions baseline is used in these analyses related to biological resources (CEQA Guidelines, section 15125(a)(1).) This is because existing conditions determine whether certain species could foreseeably be present within the DFAs and/or Plan Area. Therefore, unless otherwise specified, the quantitative analyses contained in this section are based on data from 2024. For informational purposes, it is noted that in Section 4.2. *Agriculture and Forestry Resources*, a baseline of recent historical conditions from 2015-2024 is the appropriate baseline to establish fallowed acreage due to fluctuations in agricultural practices based on water supply variability. {AM0010.1}

Regional Biological Setting

Climate

Like most of California, the Plan Area, located within the central San Joaquin Valley, experiences a temperate climate. Warm dry summers are followed by relatively cool moist winters. Summer temperatures commonly exceed 90 degrees Fahrenheit, and the relative humidity is generally very low. Winter temperatures rarely rise much above 70 degrees Fahrenheit, with daytime highs often below 60 degrees Fahrenheit. Average annual precipitation within the Plan Area is approximately 7.5 inches, almost 85 percent of which falls between the months of October and March. Nearly all precipitation falls in the form of rain.

Regional Waterways

The Fresno County (County) area of the San Joaquin Valley receives water from the San Joaquin River, Kings River, Delta-Mendota Canal, Fresno Slough, San Luis Canal/California Aqueduct, ephemeral creeks, and groundwater. The principal drainages of the region are the San Joaquin and Kings Rivers. The San Joaquin River is located approximately 1.5 miles east of the Plan Area at its closest point and runs roughly parallel with the northeastern boundary of the Plan Area (between 1.5 and 5 miles from the Plan Area boundary). The Delta-Mendota Canal parallels the San Joaquin River and the northeastern boundary of the Plan Area (from 1 to 3 miles east of the Plan Area). Just north of Mendota is the confluence of the San Joaquin River, Delta-Mendota Canal, and Fresno Slough, which runs parallel to the middle portion of the Plan Area's eastern boundary (between 3 and 5 miles) and confluent with the Kings River at its southeastern end. The Kings River is located three miles from the Plan Area's eastern boundary at its closest point, and it parallels the southeastern Plan Area boundary (between 6 and 15 miles). The Delta-Mendota Canal is completely channelized, and the Fresno Slough is primarily channelized but has some natural habitats. The San Joaquin and Kings rivers historically contained large areas of riparian, wetland, and aquatic ecosystems which supported large populations of diverse native plants and animals. Currently, these rivers support only a fraction of the riparian habitat they once supported and the aquatic habitat has been greatly degraded from agricultural runoff and irregular flows, particularly in the case of Kings River.

Native Habitats and Significant Ecological Areas in the Vicinity of the Plan Area

Native upland biotic habitats of the San Joaquin Valley once consisted of grassland and shrubland, nearly all of which have been converted to farmland or urban use over the last 80 years or more. Native plant and animal species once abundant in the valley have become locally extirpated or have experienced large reductions in their populations. The remaining native habitat in the region is particularly valuable to native wildlife species including special-status species that persist in the region. The lands surrounding the Plan Area generally consist of agricultural land, with natural habitats mainly occurring in the foothills west of I-5.

Major ecological areas near the Plan Area include the San Luis Reservoir with the adjacent Cottonwood Creek Wildlife Area (WA), O'Neill Forebay with the adjacent O'Neill Forebay WA, Pacheco State Park, San Luis Reservoir State Recreation Area (SRA), Los Banos Reservoir, the Grasslands Ecological Area (EA), the Mendota Pool, Fresno Slough, the San Joaquin River, Mendota WA, Alkali Sink Ecological Reserve (ER), Kerman ER, the historic Tulare Lakebed, and Kern National Wildlife Refuge (WRA), along with surrounding duck clubs in Tulare and Kern Counties.

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The San Luis Reservoir is 12,500 surface acres and the adjoining O'Neil Forebay is 2,250 acres. The 700-acre O'Neil Forebay WA is along the northeast edge of the forebay. The 6,300-acre Cottonwood Creek WA is along the northwest and northeast edge of the reservoir. Cottonwood WA has terrestrial habitat with ephemeral streams and a few small ponds. The O'Neil Forebay WA has riparian habitat with four small ponds for wintering waterbirds. The reservoir and wildlife areas are approximately 30 to 40 miles northwest of the Plan Area.

Pacheco State Park (6,890 acres) is along the west and southwest edge of the San Luis Reservoir. The San Luis Reservoir SRA is along the east and southeast edge of the reservoir. The south boundaries of these state lands are approximately 30 miles northwest of the Plan Area. San Luis SRA is over 27,000 acres which includes the reservoir. These state lands include terrestrial habitat with ephemeral streams. Los Banos Reservoir (620 surface acres) is approximately 22 miles northwest of the Plan Area and is part of the state park system. Los Banos Creek flows below the reservoir dam and provides riparian habitat.

The Grasslands EA is comprised of 240,000 acres divided into two districts. The North District is north of State Highway 152 and the South District is south of the highway. The South District southern border is 9 miles northwest of the Plan Area. The Grasslands EA is owned by private duck clubs, the United States (federal refuge system) and the State of California (state wildlife area). This ecological area is primarily managed wetlands for wintering migratory birds and includes extensive riparian zones along the sloughs and San Joaquin River.

The 12,000-acre Mendota WA is along the Plan Area's northeast boundary south of State Highway 180. The wildlife area includes riparian areas and approximately half of the area is managed wetlands for wintering migratory birds. Within the north central area of Mendota WA are a few private duck clubs. The Alkali Sink ER (930 acres) is along the Mendota WA northeast boundary and the Kerman ER (1,800 acres) is approximately four miles east of Alkali Sink ER along State Highway 180. Both ecological reserves are managed for Threatened and Endangered Species such as the San Joaquin kit fox.

The Fresno Slough originates near the Kings River and flows north almost parallel to the Plan Area's eastern boundary and is approximately 3 to 5 miles from the boundary. Fresno Slough flows through the middle of Mendota WA and terminates at the Mendota Pool Dam at its confluence with the San Joaquin River. The Mendota Pool has approximately 1,200 surface acres with surrounding riparian areas. The San Joaquin River originates in the Sierra Nevada east of Fresno, flows to the west and eventually curves to the north on the San Joaquin Valley floor. It meets Fresno Slough at the Mendota Pool Dam and continues to flow through the Grasslands EA and then north to the Delta. The San Joaquin River below Friant Dam has more flows in recent years because of the Spring-run Chinook salmon restoration program.

The northwest shoreline of the historic Tulare Lakebed is approximately 7 miles southeast of the nearest Plan Area boundary. Tulare Lake was once the largest freshwater lake west of the Mississippi River. Two large flood storage areas, South Wilbur and Hacienda Ranch, which are along the southern Tulare Lakebed shoreline, are approximately 22 miles southeast of the Plan Area. Adjacent to these flood basins is Tulare Lake Drainage District Agricultural Evaporation Basins, which also attract waterbirds.

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Kern NWR is approximately 32 miles southeast of the Plan Area. Kern NWR is 16,000 acres, of which approximately one-third to one-half is managed wetlands for wintering migratory birds. Within southwestern Tulare County and in the areas south of Kern NWR there are several small private duck clubs.

The amount of flooded acreage for all the above ecological habitats depends on the particular water year. Low to drought water years provide almost no to very low acreage wetland habitats in the valley. Whereas, in normal, above normal to wet years, extensive areas are flooded throughout the San Joaquin Valley. For example, during 2023, a wet and very snowy year, the Tulare Lakebed flooded for the first time in decades (since the 1980s). During these flood years, wetland habitats attract thousands of waterbirds to the valley and in some years provides habitat across all seasons. During normal to above normal water years the Federal and State managed wetlands receive their full allocation of water supply from the US Bureau of Reclamation pursuant to the Central Valley Project Improvement Act, and can receive additional water if available. This extra water is usually used for wildlife and spring and summer irrigation food crops and provides summer water for small, ponded areas. During most years outside of the private and publicly managed wetland areas, increased amounts of wetland habitat become available in the valley during the winter and spring months after rain events. For example, the ecological reserves near Mendota WA will form small shallow pools which provide water during the winter and spring for waterbirds.

In summary, major ecological habitats that provide water areas for wildlife range from less than three miles to 40 miles from the Plan Area boundaries. Most of these areas are to the northwest, east and southeast of the Plan Area. For a detailed discussion of waterfowl use of these ecological habitats, see “Avian Movement” subsequently in this section.

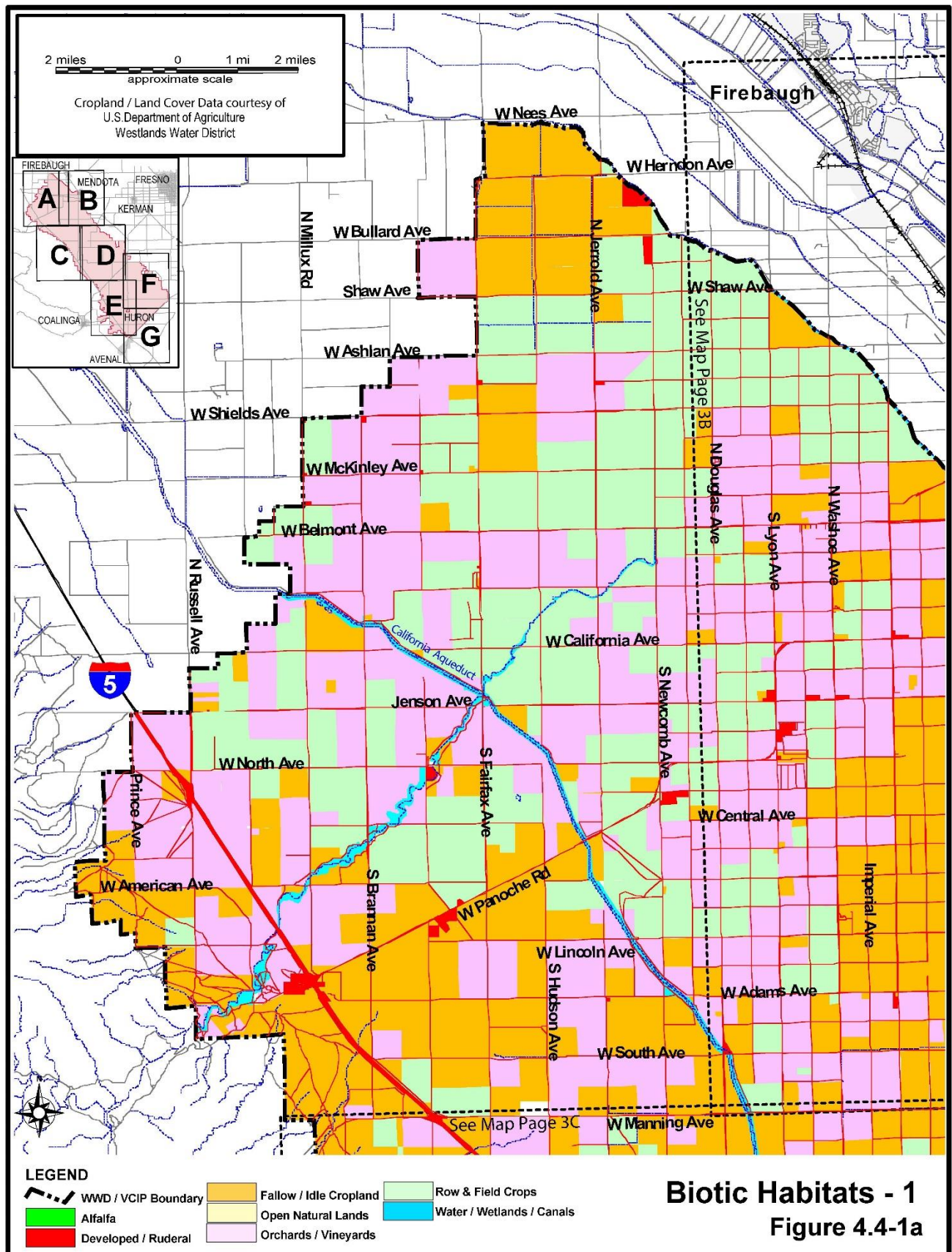
Biotic Habitats within the Plan Area

Eight biotic habitats and land uses occur in the Plan Area, including: alfalfa, fallow/idle croplands, open/natural lands, orchards/vineyards, row and field crops, water/wetlands/riparian woodlands, and roads/developed/ruderal. These habitat types are shown in Figures 4.4-1a-g. It should be noted that the Plan Area supports a number of solitary trees and small clumps of trees scattered throughout. The tree mapping unit was not of sufficient size to include as a separate biotic habitat; however, trees are briefly described under the expanded habitat category “Water/Wetlands/Riparian Woodland” below. These habitat types are described below and the land area covered by each is shown in Table 4.4-1.

Alfalfa

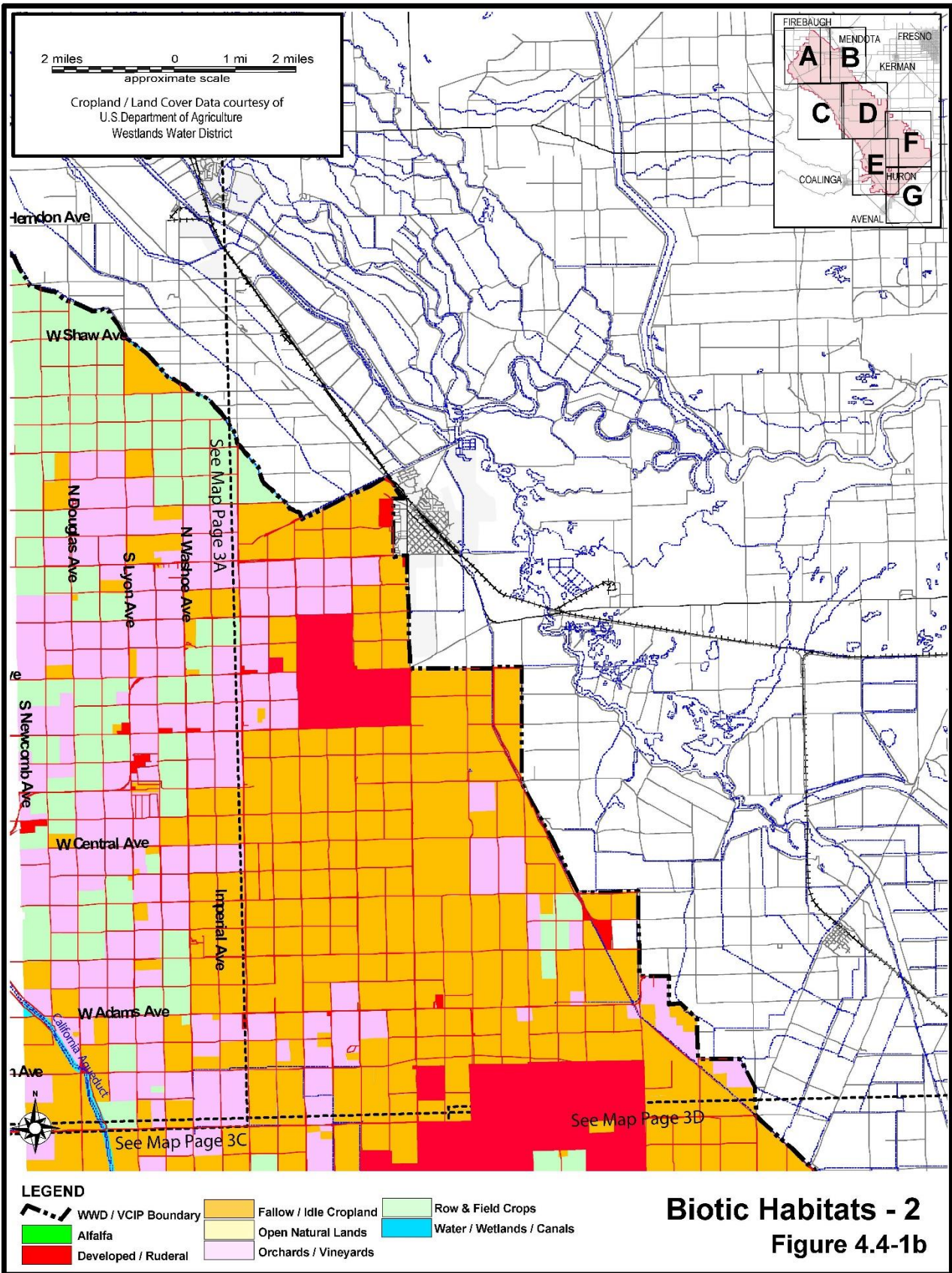
Distinct from row and field crops, lands used specifically to grow alfalfa provide a unique habitat for a number of wildlife species. Plant species found within alfalfa fields are extremely limited, consisting largely of alfalfa (*Medicago sativa*), although a very small portion of a few weedy species such as Russian thistle (*Carduus pinocephalus*) and cheeseweed (*Malva parviflora*) may persist on the margins of these lands. Wildlife species likely to forage in alfalfa fields include various lizard species, turkey vulture (*Cathartes aura*), Swainson’s hawk (*Buteo swainsoni*), northern harrier (*Circus cyaneus*), killdeer (*Charadrius vociferus*), mourning dove (*Zenaida macroura*), American crow (*Corvus brachyrhynchos*), California ground squirrel (*Otospermophilus beecheyi*), Botta’s pocket gopher (*Thomomys bottae*), Heermann’s kangaroo rat (*Dipodomys heermanni*), various native deer mice (*Peromyscus* sp.), raccoon (*Procyon lotor*), and coyote (*Canis latrans*).

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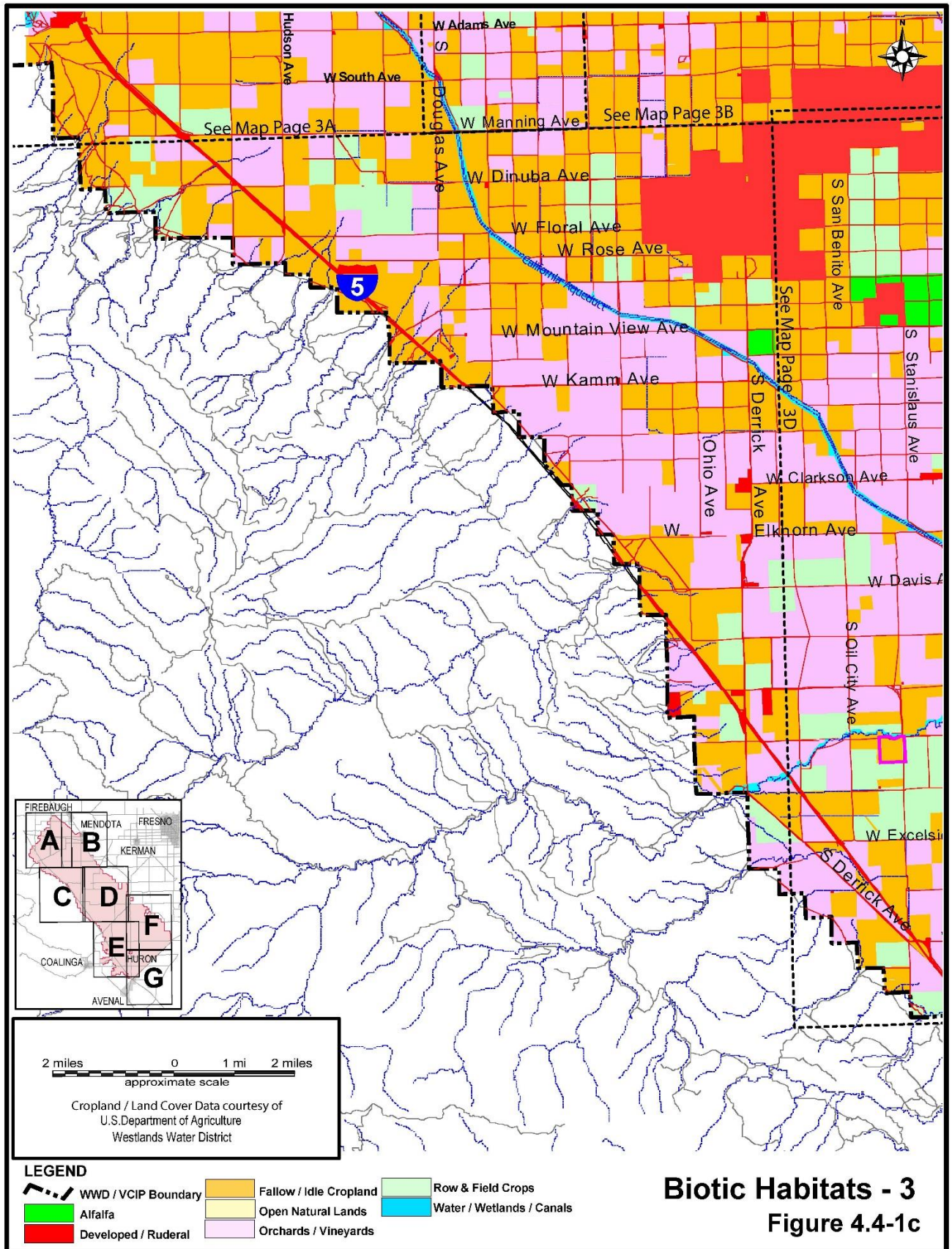
Source: Live Oak Associates

4. Environmental Analysis
4.4. Biological Resources



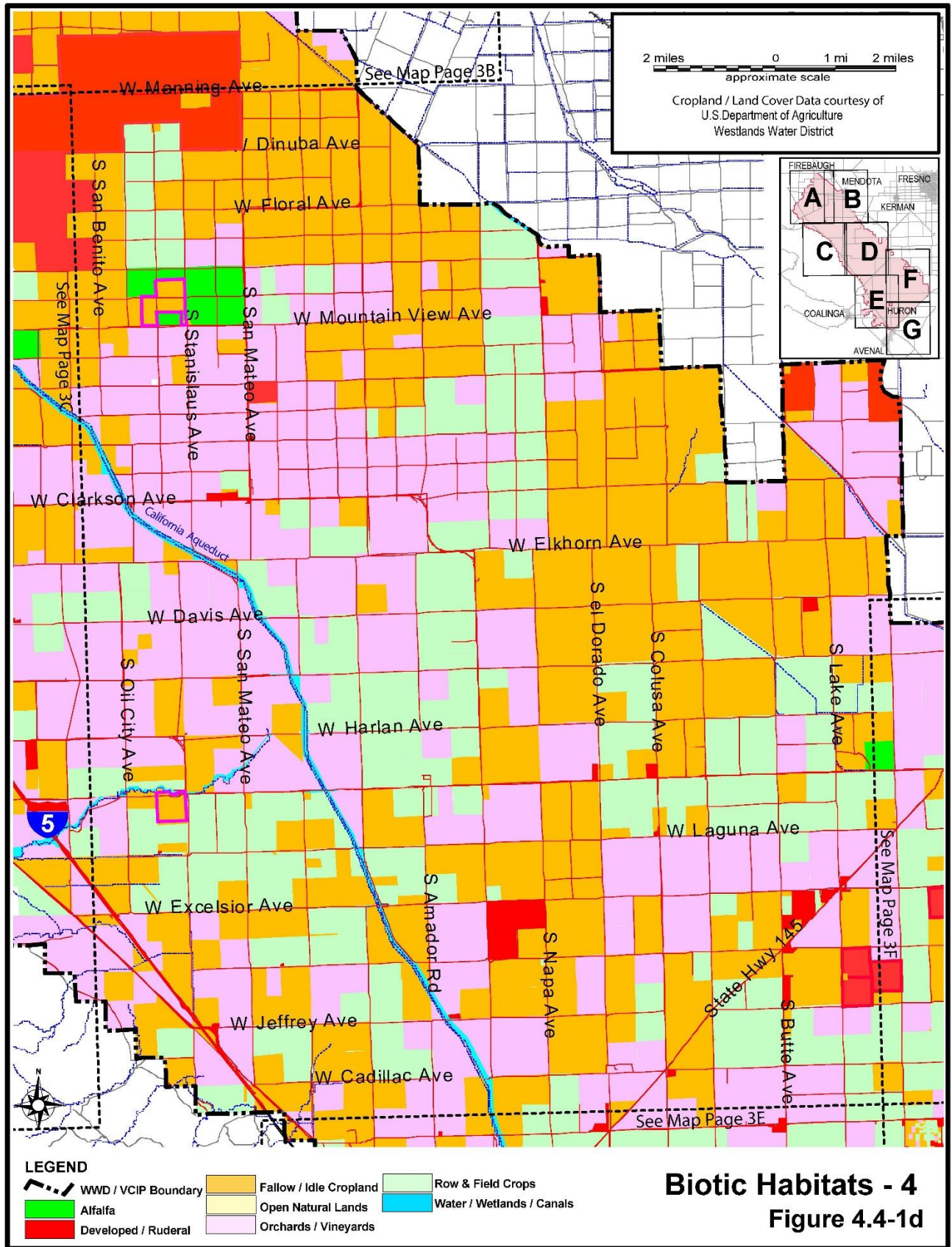
Source: Live Oak Associates

4. Environmental Analysis
4.4. Biological Resources

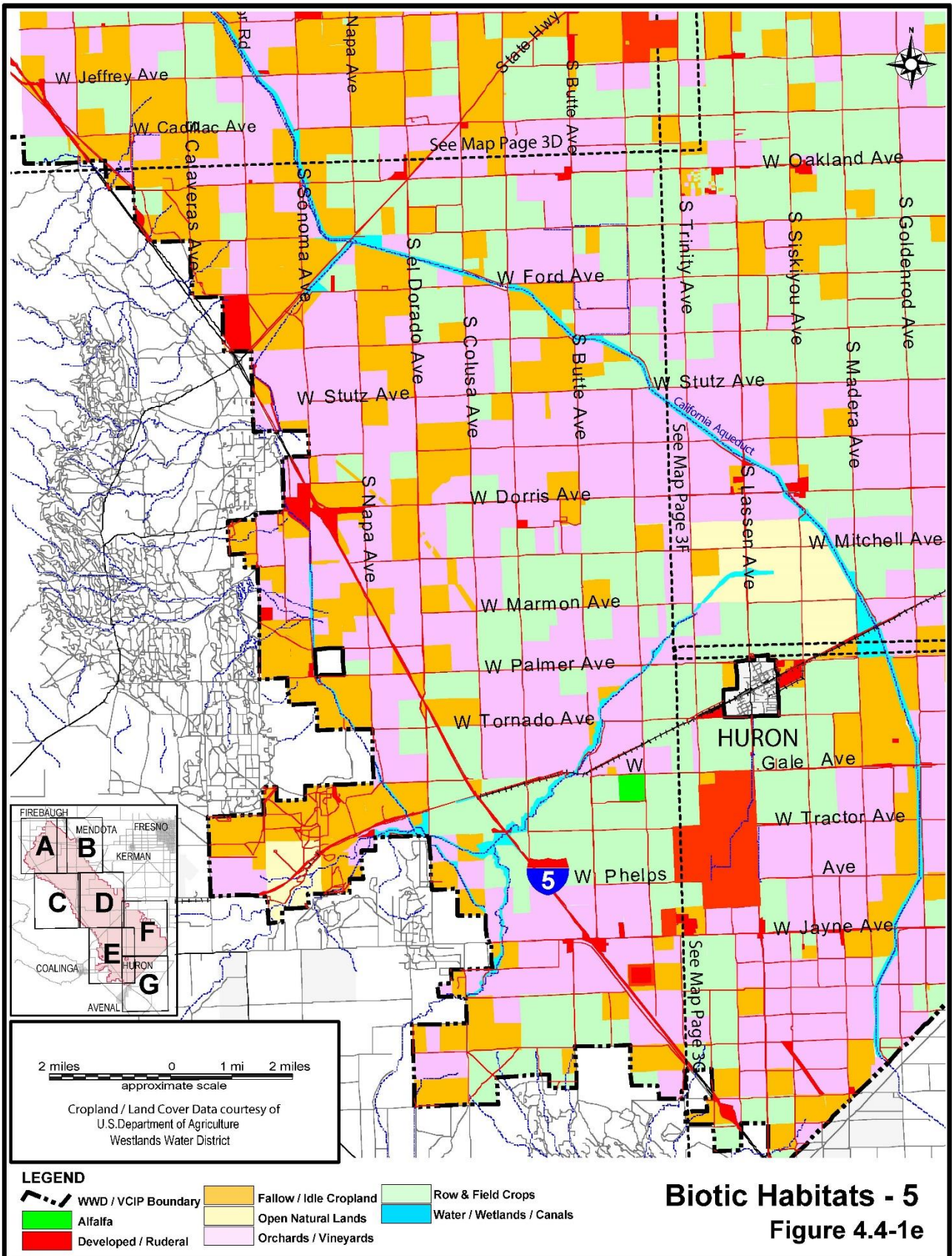


4. Environmental Analysis

4.4. Biological Resources

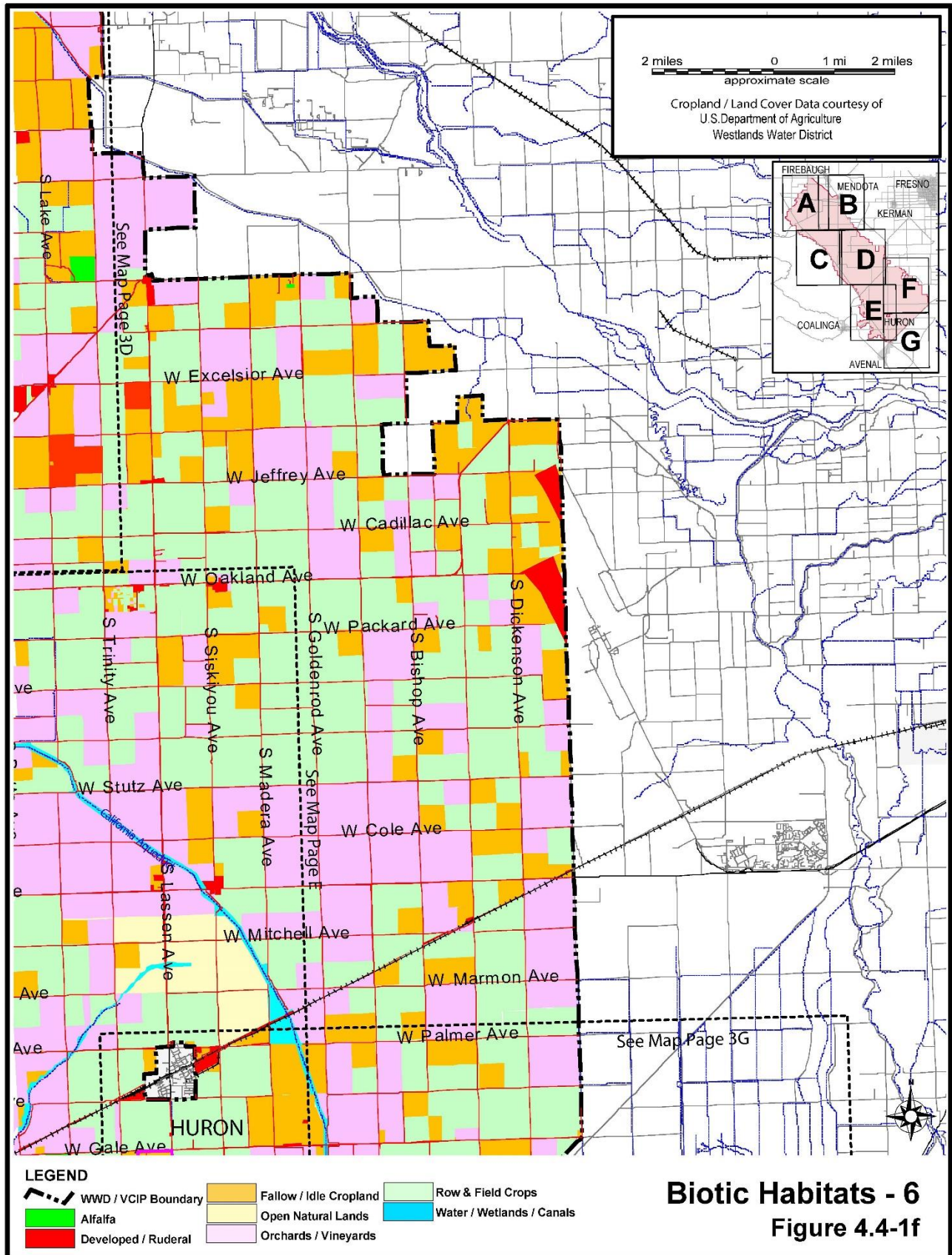


4. Environmental Analysis
4.4. Biological Resources



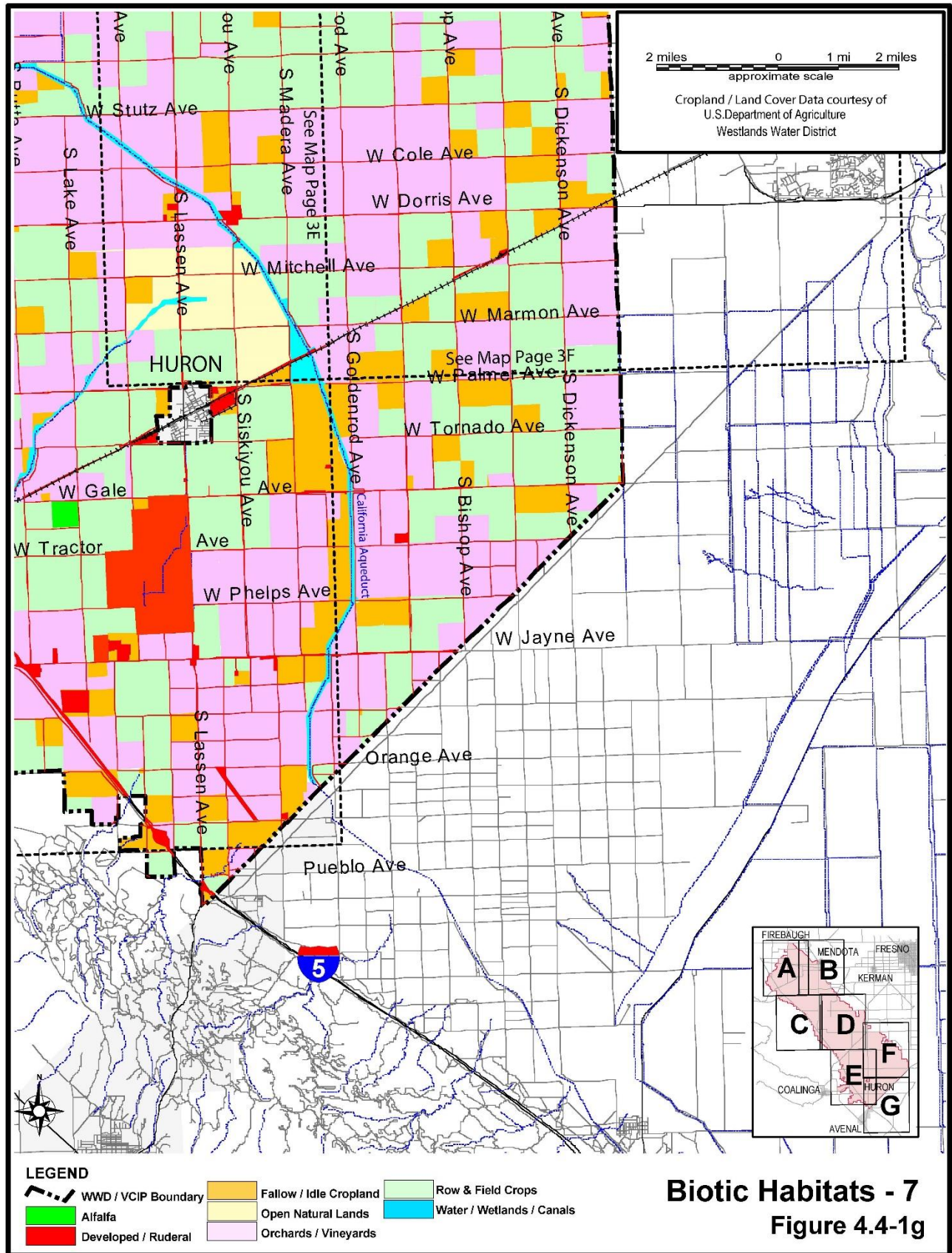
Source: Live Oak Associates

4. Environmental Analysis
4.4. Biological Resources



Source: Live Oak Associates

4. Environmental Analysis
4.4. Biological Resources



Lizard and rodent species listed above are also likely to breed in alfalfa fields. Notably, the northern harrier is known to nest within agricultural fields such as alfalfa, and killdeer may nest on the edges of alfalfa fields.

TABLE 4.4-1
HABITAT TYPES WITHIN THE PLAN AREA BY ACREAGE

Habitats	Total acres within DFAs	Remainder within Plan Area	Total within Plan Area
Alfalfa	910	492	1,402
Fallow/Idle Crop	81,357	88,062	169,419
Open/Natural Lands	143	3,476	3,619
Row & Field Crops	28,264	113,867	142,131
Orchards/Vineyards	23,870	162,779	186,649
Water/Wetlands/Riparian Woodland	819	5,385	6,204
Roads/Developed/Ruderal	637	24,939	25,576
TOTAL	136,000	399,000	535,000

*Potential foraging habitat for Swainson's hawk and burrowing owl shown in green.

Source: Live Oak Associates

Fallow/Idle Croplands

Under existing conditions, approximately 32 percent of the Plan Area is made up of fallow or idle croplands, whereas approximately 60 percent of the DFAs consist of fallow or idle croplands. These lands vary in cover from completely barren to well-vegetated. Barren lands are completely devoid of vegetation and consist of dry, silty soils. Due to being heavily managed, these barren lands are unlikely to support core habitat for wildlife species. Vegetated fallow or idle croplands are largely dominated by annual grasses and herbaceous species, likely including slim oat (*Avena barbata*), ripgut brome (*Bromus diandrus*), Russian thistle, jimsonweed (*Datura wrightii*), barnyard grass (*Echinochloa crus-galli*), tropical horseweed (*Erigeron sumatrensis*), hairy leaved sunflower (*Helianthus annuus*), seaside heliotrope (*Heliotropium currasavicum* ssp. *oculatum*), mustard (*Hirschfeldia incana*), cheeseweed, and silverleaf nightshade (*Solanum elaeagnifolium*). The more vegetated fallow and idle crop lands likely support many of the same wildlife species found in alfalfa fields. Lizards, California ground squirrels and other small mammals are likely to forage and breed in these areas. Consequently, raptor species including red-tailed hawks and Swainson's hawks, will forage on fallow and idle croplands, and northern harriers may nest on these lands. Burrowing owls may also nest on fallow and idle croplands. Finally, the same predatory mammalian species known to use alfalfa fields are also likely to pass through and forage in well-vegetated fallow and idle croplands.

Open/Natural Lands

Less than one percent of the Plan Area consists of open and natural lands, which provide refuge for both plants and wildlife, several of which would otherwise be unlikely to survive in the largely agricultural and

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managed lands of the San Joaquin Valley. These lands consist primarily of open grassland, natural scrub brush habitats and natural riparian corridors. The majority of open and natural lands within the Plan Area occur to the west of I-5, with some remnant open and natural lands occurring on smaller acreages throughout the Plan Area. Plant species likely to occur in these open and natural lands include but are not limited to fiddleneck species (*Amsinckia* sp.), several salt brush species, such as cattle spinach (*Atriplex polycarpa*), common California annual grasses, hairy-leaved sunflower, and tamarisk (*Tamarix parviflora*). Various amphibian and reptile species are likely to breed and subsist in these lands, primarily in the grassland habitats, likely sustaining populations which also use more managed agricultural lands. Several bird species are known to use this habitat type, including northern harriers, red-tailed hawk, burrowing owls, horned lark, California quail (*Callipepla californica*), and others. Bats, while unlikely to roost in the majority of these lands (the exception being woodlands, riparian areas, and other areas supporting trees with cavities or buildings being exceptions), are known to forage in open grassland and scrub land habitats, as well as over riparian areas. A wide variety of other mammalian species also use these lands for foraging and breeding, including California ground squirrel, Botta's pocket gopher, Heermann's kangaroo rat, various species of native California mice (such as those in the genus, *Peromyscus*), black-tailed hare (*Lepus californicus*), raccoon, American badger (*Taxidea taxus*), red fox, and coyote.

Orchard/Vineyard

Approximately 35 percent of the Plan Area consists of orchards and vineyards, with orchards predominating. The orchard trees primarily consist of almond and pistachio trees. For the most part, orchards within the Plan Area are highly maintained with no vegetation observed beneath the orchard trees, although some orchards west of I-5 were observed to support a well-developed understory of vegetation between the rows of trees. Vineyards, which are substantially fewer in number and size than orchards, support herbaceous vegetation in the rows between the vines. Orchards and vineyards of the Plan Area offer limited habitat value to native wildlife species due to the high level of maintenance and general lack of understory vegetation. A number of avian species will occur in these habitats due largely to the variety of forage; however, other taxa are more limited due in large part to regular ground disturbance. For example, amphibian species are not likely to occur in the orchards and vineyards due to lack of vegetative cover and consistent ground disturbance. A limited number of amphibian species may occur in these habitats if they support understory vegetation, and/or are in close proximity to ponds, waters, and wetlands. Common reptiles are likely limited to western fence lizards (*Sceloporus occidentalis*) and common side-blotched lizards (*Uta stansburiana*). Raptors adapted to hunt within the tree canopy such as Cooper's hawks (*Accipiter cooperii*) and sharp-shinned hawks (*Accipiter striatus*) may forage for small birds in the orchards, and northern harriers and American kestrels (*Falco sparverius*) may forage over the vineyards. Avian species frequenting orchards and vineyards to forage or nest include but are not limited to the mourning dove (*Zenaidura macroura*), California scrub jay (*Aphelocoma californica*), northern mockingbird (*Mimus polyglottos*), American robin (*Turdus migratorius*), Brewer's blackbird (*Euphagus cyanocephalus*), and house finch (*Haemorrhous mexicanus*). A limited number of these medium to small bird species may nest in the orchard trees. Foraging raptors and mammalian predators may occur in the orchards and vineyards of the Plan Area from time to time. Various species of bat may forage over the orchards and vineyards for flying insects. Small mammal species such as California ground squirrels, Botta's pocket gophers, and deer mice may also occur within the orchards and vineyards. Mammalian predators potentially occurring in the orchards and vineyards of the Plan Area are expected to include raccoons, red fox, and coyotes.

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Row and Field Crops

At the time of LOA's July 2024 field survey, the Plan Area contained extensive fields of tomatoes, cotton, and wheat, and other row and field crops. Non-crop vegetation was limited to the field margins and consisted primarily of weedy annual species including but not limited to red brome (*Bromus madritensis*), red stemmed filaree (*Erodium cicutarium*), and cheeseweed. A number of wildlife species could occur in these fields from time to time. Amphibians are expected to be uncommon in these areas due to the lack of breeding habitat, but may occur in crop lands with adjacent ponds, irrigation canals, or other water features. Common reptiles such as the common side-blotched lizard and Pacific gopher snake (*Pituophis catenifer catenifer*) could potentially occur in the fields. Avian species expected to forage in the fields include raptors such as the red-tailed hawk and American kestrel, mourning dove, western kingbird (*Tyrannus verticalis*), American crow, savannah sparrow (*Passerculus sandwichensis*), western meadowlark (*Sturnella neglecta*), and Brewer's blackbird. Small mammals expected to occur in the agricultural fields include Botta's pocket gophers, California voles (*Microtus californicus*), and deer mice. Mammalian predators with the potential to occur in the fields include disturbance-tolerant species such as raccoon and coyote.

Water/Wetlands/Riparian Woodland

The Plan Area contains several different types of water and wetland habitats, including natural riparian corridors, irrigation canals, irrigation ponds, the San Luis Canal/California Aqueduct, and a few naturally occurring vernal pools and wetlands. A vernal pool is a natural pool that fills up seasonally and dries down in the dry season which supports a number of plant and animal species endemic to that unique environment. Vernal pool and ephemeral wetlands are very limited within the Plan Area and are present only in few locations on the eastern margins of the Plan Area. In general, vernal pool landscapes in California have largely been converted to agricultural and urban environment. Species that depend on vernal pools are becoming increasingly rare and many of them have been or are being listed under the California and/or federal Endangered Species Act. Natural riparian corridors occur mainly to the west of I-5 in open/natural lands but also weave through actively farmed and fallow lands within the western portions of the Plan Area. The extent of riparian woodlands within the Plan area was not estimated as this element did not rise to level of the minimum mapping unit (i.e., the smallest area that can be reliably mapped) of the mapping data used for this analysis. Common tree species that may occur within riparian woodlands include but are not limited to Fremont cottonwood (*Populus fremontii*), California sycamore (*Platanus racemosa*), willow (*Salix* spp.), blue oak (*Quercus douglasii*), live oak (*Quercus agrifolia*) and valley oak (*Quercus lobata*). Characteristic undergrowth plant species may include mugwort (*Artemisia douglasiana*), mulefat (*Baccharis viminea*), wild rose (*Rosa californica*), and blackberry (*Rubus* spp.).

Wildlife species likely to occur in natural riparian corridors include amphibians, reptiles, and bird species common to the Central Valley, as well as raptors such as Swainson's hawks and northern harriers, native mice, bats, and various mammalian species. Irrigation canals are common throughout the Plan Area and vary in the amount of vegetation they support. Many of the canals support wetland plant species, including cattails, tule, and cottonwood trees. Species likely to use canals include Pacific chorus frogs (*Pseudacris regilla*), western toads (*Bufo boreas*), snake species, lizard and turtle species, and a number of birds such as the red-winged blackbird (*Agelaius phoeniceus*).

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A large segment of the San Luis Canal/California Aqueduct (Aqueduct) passes through the Plan Area. This water conveyance structure is concrete lined and devoid of vegetation. At the time of LOA's field survey the Aqueduct held water. Due to the concrete lining and the absence of vegetation, the aqueduct has limited value to native wildlife. The Aqueduct is known to support several fish species: most notably, striped bass (*Morone saxatilis*), as well as various catfish and carp species, among others. Various species of waterfowl are known to use the San Luis Canal/California Aqueduct, such as mallards (*Anas platyrhynchos*), buffleheads (*Bucephala albeola*), lesser scaups (*Aythya affinis*), and ruddy ducks (*Oxyura jamaicensis*). Burrowing owls are likely to form colonies along the outer sides of the Aqueduct, and cliff swallows (*Petrochelidon pyrrhonota*) and barn swallows (*Hirundo rustica*) are expected to forage over the Aqueduct and nest under bridges going over the Aqueduct. Various bat species may also forage over the open water of the Aqueduct, and California ground squirrels and other rodents may burrow along the outer sides of the Aqueduct. Aside from bats and rodents, other mammal species occurring in habitats adjacent to the Aqueduct are expected to use the Aqueduct for movement.

Ruderal/Developed

Ruderal/developed lands are lands regularly disturbed by human activities and/or associated with built environments. This habitat occurs throughout the Plan Area, and includes existing solar farms, residential areas, agricultural and industrial buildings, paved and dirt roads, and road shoulders, and infrastructure associated with the San Luis Canal/California Aqueduct. Except where landscaped planted varieties occur around residential areas, these areas are barren to sparsely vegetated. Where vegetation is present, it generally consists of common weedy grasses and forbs such as farmer's foxtail (*Hordeum murinum* spp. *leporinum*), and short-podded mustard (*Hirschfeldia incana*). Trees associated with these areas consist of non-native ornamental tree species.

The wildlife habitat value of ruderal/developed lands within the Plan Area is relatively low; nonetheless, these lands can support some native wildlife species. Common reptiles such as the western fence lizard (*Sceloporus occidentalis*), common side-blotched lizard, and Pacific gopher snake could potentially use ruderal habitats within the Plan Area. Avian species expected to forage within or pass over ruderal/disturbed areas of the Plan Area include the mourning dove, California scrub jay, killdeer, Brewer's blackbird, American crow, house finch, and house sparrow (*Passer domesticus*). Additionally, burrowing owls may nest along the sides of roads and Swainson's hawks may nest in medium to large trees.

Evidence of burrowing mammal activity on the ruderal/developed lands of the Plan Area is minimal. Small mammals potentially occurring on ruderal/developed lands of the Plan Area include the California ground squirrel, brown rat (*Rattus norvegicus*), Botta's pocket gopher, and house mouse (*Mus musculus*). A variety of native bat species have the potential to forage over ruderal/developed areas of the Plan Area, and some of these bat species may roost in the eaves and siding of residential, agricultural, and industrial buildings. Mammalian predators with the potential to occasionally occur on ruderal/developed lands of the Plan Area include disturbance-tolerant species such as the raccoon, Virginia opossum (*Didelphis virginiana*), and coyote.

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 {AM0010.1}

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 does, 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 that provide for regional wildlife movement include the natural hills west of I-5 which have not been substantially altered.

The Plan Area consists largely of agricultural fields bisected by the San Luis Canal/California Aqueduct and also includes the lower margins of the natural hills on the western side of I-5. Canals and ditches within the Plan Area can function as movement corridors for the regular home range or dispersal movements of native wildlife, including special-status species.

The primary movement corridors in the Plan Area vicinity include the hills and foothills to the west of I-5, and the riparian corridors along the San Joaquin and Kings rivers and the Delta-Mendota Canal and Fresno Slough to the east of the Plan Area. Additionally, the northern third of the Plan Area serves some function as a wildlife linkage/corridor; in particular, a narrower southwest-northeast wildlife linkage/corridor area across the Plan Area from the region of Three Rocks to just south of the Mendota Wildlife Refuge. Additionally, maps within the USFWS' *Recovery Plan for Upland Species of the San Joaquin Valley* (Recovery Plan) (USFWS 1998) also maps the northern portion of the Plan Area as "Proposed areas where connectivity and linkages should be promoted," and the natural hills west of I-5 are likely used by native wildlife as a corridor along the foothills. Much of the foothill area west of I-5, along the edge of the Plan Area boundary, is mapped as "[a]reas along the valley's edges within which a contiguous band of natural lands and wildlife-compatible farmlands which should be maintained." Areas mapped as "Public Lands: Federal, State & Conservation lands (some lands unsuitable for species addressed in this plan)" also exist west of Interstate 5 along the edge of the Plan Area boundaries (USFWS 1998).

Avian Movement

Waterfowl Movements in the Vicinity of the Plan Area

Waterfowl migration occurs along the Pacific Flyway from as far as the eastern Siberia peninsula and across western North America to the Sacramento and San Joaquin valleys. Direct migration from California to Alaska across the Pacific Ocean also occurs. Migratory waterfowl move through the Central Valley from the Sacramento Valley to the Delta Region, to Suisun Marsh, the San Francisco Bay, the Grasslands Region, Mendota Wildlife Area, the Tulare Lakebed and Kern NWR. A small portion will continue to southern California and Mexico.

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Daily waterfowl movements have been documented primarily between wintering roosting areas to feeding areas. Common habitat use or feeding areas for wintering waterfowl in the Central Valley include but are not limited to: managed wetlands, pasture lands, alfalfa, idle croplands, corn, rice and protected lands (refugia) especially during the waterfowl hunting season. Wintering waterfowl will also use green winter wheat and barley sprout fields to feed. (See the Biological Evaluation in Appendix C of this document for a detailed summary of tracking data for waterfowl.)

Major ecological habitats that provide water areas for migratory waterfowl range from less than three miles to 40 miles from the Plan Area boundaries. The distances that waterfowl move at any given time are within distances between the regional habitat areas and the Plan Area boundaries. In addition, telemetry waterfowl movement studies demonstrate waterfowl use lands within the Plan Area and indicates there is a high probability waterfowl move into other interior areas, especially areas that have grains, alfalfa and irrigated pastures within the Plan Area.

Shorebird Movements in the Vicinity of the Plan Area

Pacific Flyway shorebird migration routes are similar to waterfowl routes described above. Shorebirds also have a major Pacific Ocean coastline migration route from California to Alaska and a larger proportion of shorebirds migrate to wintering grounds in Mexico and South America.

Shorebird habitat preferences include but are not limited to: flooded or irrigated agricultural croplands, rice, short grass pastureland, managed wetlands, ditches, sloughs, streams, farm ponds, reservoirs, sewage ponds and agricultural evaporation basins. Since 1998, the number and acreage of agricultural evaporation basins has decreased due to a change in crop patterns and irrigation techniques.

Major ecological habitats that provide water areas for migratory shorebirds range from less than three miles to 40 miles from the Plan Area boundaries. These shorebird movement distances are within distances between the regional habitat areas and the Plan Area boundaries. In addition, telemetry shorebird movement studies demonstrate shorebirds use lands within the Plan Area and indicate that there is a high probability that shorebirds move into other interior areas within the Plan Area. (See the Biological Evaluation in Appendix C for a detailed summary of tracking data for shorebirds.)

Other Migratory and Residential Avian Species in the San Joaquin Valley

It is estimated that there are 112 migratory landbird species in the Central Valley, including 89 species in the San Joaquin Basin and 91 species in the Tulare Basin. Examples of the most abundant species include, but are not limited to Wilson's warbler (*Cardellina pusilla*), tree swallow (*Tachycineta bicolor*), orange-crowned warblers (*Oreothlypis celata*), Lawrence's goldfinch (*Spinus lawrencei*), marsh wren (*Cistothorus palustris*), and black-throated gray warblers (*Setophaga nigrescens*). The San Joaquin and Mokelumne Rivers provide important habitats for migrant willow flycatchers (*Empidonax traillii*), orange-crowned warblers, yellow warblers (*Setophaga petechia*), and Wilson's Warblers.

Mourning doves are commonly found in open woodlands, grasslands, croplands, deserts croplands, pastures, native grasslands, open chaparral, open hardwood, hardwood-conifer, riparian, and low-elevation conifer habitats. The mourning dove is a resident and migratory bird in California and is very common in the San Joaquin Valley. Doves require a nearby water source and feed on seeds of cereal grains, forbs, and grasses.

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The Central Valley supports more than 90 percent of the breeding tricolored blackbird (*Agelaius tricolor*) populations and more than 99 percent of the global population are found in the state. Most of the largest colonies are in the San Joaquin Valley. Tricolored blackbirds are listed as State Threatened and are primarily a California resident bird, but a small portion of the population migrates to the Central Valley from northern states. Nesting preference is in cattail (*Typha* sp.) and tule (*Scirpus* sp.) stands. Other minor nesting habitats include willows (*Salix* sp.), Himalayan berries (*Rubus discolor*), thistles (*Cirsium* and *Centaurea* spp.), and nettles (*Urtica* sp.). Because of loss of native nesting habitat, Tricolor Blackbirds have moved into silage, alfalfa, and grain fields for nesting. Tricolor feeding areas include native grasslands, irrigated pastures, dry seasonal pools, seasonal wetlands, riparian scrub habitats, open marsh borders, agriculture fields, such as cereal grains and alfalfa which are continuously mowed, rice fields, feedlots and dairies.

The Central Valley is a major breeding area for the state-listed migratory Swainson's hawk (*Buteo swainsoni*). Swainson's hawks migrate up and down the Central Valley and winter in South America. Swainson's hawks preferred nesting trees include valley oaks (*Quercus lobata*), Fremont's cottonwood (*Populus fremontii*), willows (*Salix* spp.), walnut (*Juglans* spp.), sycamore (*Platanus* sp.), eucalyptus (*Eucalyptus* spp.), redwoods (*Sequoia sempervivens*), conifers, and riparian forest zones. Concentrated nesting Swainson's hawks have been observed within the vicinity of Mendota Wildlife Area along the Kings River/Fresno Slough riparian corridor. Swainson's hawks preferred foraging areas include native grasslands, irrigated pasture, alfalfa and harvested grain fields. Large flocks of spring migrating Swainson's hawks have been observed in the San Joaquin Valley following moving agricultural discs after the grain has been harvested, as the heavy equipment flushes out insects and rodents for the hawks to feed on.

Similar to waterfowl and shorebirds, research shows that white-faced Ibis (*Plegadis chihi*) uses the wastewater evaporation basin for NAS Lemoore in Kings County outside the Plan Area, and also two points in the northeast corner of the Plan Area. Other long-legged waders in the San Joaquin Valley include the great egret (*Ardea alba*), snowy egret (*Egretta thula*), cattle egret (*Bubulcus ibis*), black-crowned night heron (*Nycticorax nycticorax*), great blue heron (*Ardea herodias*), and green heron (*Butorides virescens*). Long-legged waders prefer wetlands but will feed in agricultural areas such as irrigated crops (grains, alfalfa, pastures) and irrigation canals. Nesting habitat preferences include dense cattail or tule stands, trees, and wooded riparian zones.

The above-mentioned resident and migratory birds are examples of species that could potentially use lands within the Plan Area. Site environmental reviews of potential VCIP projects would provide a more detailed list of all potential avian species that could be affected by future specific projects within the Plan Area.

Special-Status Plants and Animals

Several species of plants and animals in 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 in Section 4.4.2. *Regulatory Context* below, state and federal laws have provided CDFW and the USFWS with mechanisms for conserving and protecting the diversity of plant and animal species native to the state. A sizable number of native plants and animals have been formally designated as "threatened" or "endangered" under state and federal endangered species legislation. {AM0010.1}

Others have been designated as candidates for such listing. Still others have been designated as “species of special concern” by CDFW. The CNPS has developed its own set of lists of native plants considered rare, threatened, or endangered, and this listing is sanctioned by CDFW. Collectively, these plants and animals are referred to as “special-status species.”

Several special-status plants and animals occur in the vicinity of the Plan Area. A search of published accounts for all relevant special-status plant and animal species was conducted for the Plan Area using the California Natural Diversity Data Base Rarefind 5 (CDFW 2024). These species, and their potential to occur in the Plan Area, are listed in Table 4.4-2 on the following pages.

TABLE 4.4-2
SPECIAL-STATUS SPECIES THAT COULD OCCUR IN THE VICINITY OF THE VCIP PLAN AREA

PLANTS (adapted from <i>Species Listed as Threatened</i>)	CDFW or	2024 and CNPS 2024) <i>Endangered under the State</i>	<i>and/or Federal Endangered Species Act</i>
Species	Status	Habitat	*Occurrence in the Plan Area
California jewel-flower (<i>Caulanthus californicus</i>)	FE, CE, CRPR 1B	<u>Habitat</u> : Chenopod scrub, valley and foothill grassland, pinyon-juniper woodland. <u>Elevation</u> : 65-1860 meters. <u>Blooms</u> : February–May.	Possible . The California jewel-flower was documented in the Plan Area near Huron, CA in 1893, but is considered extirpated from this location due to agriculture and development. The closest recent observations of California jewel-flower are located at least 5.5 miles southwest of the Plan Area in the foothills of the Southern Coastal Range (CDFW 2024). Open/natural lands of the Plan Area west of I-5 provide potentially suitable habitat for this species.
San Joaquin woolly threads (<i>Monolopia congdonii</i>)	FT, CRPR 1B	<u>Habitat</u> : Chenopod scrub, valley and foothill grassland in alkaline or loamy plains, and in sandy soils. <u>Elevation</u> : 55-840 meters. <u>Blooms</u> : February-May.	Present . Over 100 individuals of this species were documented within open/natural lands in the southwestern end of the Plan Area associated with Los Gatos Creek in 2016 (CDFW 2024). All open/natural lands of the Plan Area provide potential habitat for this species.
PLANTS (adapted from CDFW <i>Species Listed by CNPS</i>)	2024 and	CNPS2024)	
Species	Status	Habitat	*Occurrence in the Plan Area
Lost Hills Crownscale (<i>Atriplex coronata vallicola</i>)	CRPR 1B	<u>Habitat</u> : Occurs in powdery, alkaline, and vernal moist soils within chenopod scrub, valley and foothill grassland; usually in wetlands and vernal pool habitat and often associated with <i>Frankenia</i> , <i>Atriplex</i> spp., and <i>Distichlis</i> . <u>Elevation</u> : 45-885 meters <u>Blooms</u> : April to September	Possible . The Lost Hills crownscale has been documented as recently as 2024 (CDFW) one and a half miles outside the Plan Area within the lower foothills of the Coast Range. Potentially suitable habitat for this species is present in both open/natural lands of the Plan Area with alkaline soils and water/wetlands with alkaline soils.

*See end of table for explanation of Occurrence Designations and Status Codes.

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TABLE 4.4-2 (CONT'D)
SPECIAL-STATUS SPECIES THAT COULD OCCUR IN THE VCIP PLAN AREA AND VICINITY

PLANTS (adapted from CDFW 2024 and CNPS2024) Species Listed by CNPS			
Species	Status	Habitat	*Occurrence in the Plan Area
Hall's tarplant (<i>Deinandra halliana</i>)	CRPR 1B	<u>Habitat</u> : Occurs in cismontane woodland, chenopod scrub, and valley and foothill grassland. Occurs in a variety of soils, including clay, sand, and alkaline soils. <u>Elevation</u> : 155-975 meters <u>Blooms</u> : April to May	Present . This species was documented in the western portion of the Plan Area in 1988 along a creek and is presumed extant (currently existing) in that location (CDFW 2024). Potentially suitable habitat for this species occurs in open/natural lands of the Plan Area.
Recurved larkspur (<i>Delphinium recurvatum</i>)	CRPR 1B	<u>Habitat</u> : Occurs in alkaline soils of valley saltbush or valley chenopod scrub, valley and foothill grassland, and cismontane woodland. <u>Elevation</u> : 3-790 meters <u>Blooms</u> : March to June	Possible . This species has been historically documented within what is now agricultural land on the Plan Area near Five Points (CDFW 2024). Open/natural lands of the Plan Area with alkaline soils provide potential habitat for this species.
Hoover's eriastrum (<i>Eriastrum hooveri</i>)	CRPR 4	<u>Habitat</u> : Occurs in chenopod scrub, valley and foothill grassland, and pinyon and juniper woodlands. Found on sparsely vegetated alkaline alluvial fans. Also found in the Temblor Range on sandy soils. <u>Elevation</u> : 50-915 meters <u>Blooms</u> : March-July	Possible . Although Hoover's eriastrum has not been documented within the Plan Area, it was observed in 2024 approximately 0.37 miles west of the Plan Area (CDFW 2024). Potentially suitable habitat for this species is present in open/natural lands and water/wetlands within the Plan Area.
Alkali-sink goldfields (<i>Lasthenia chrysantha</i>)	CRPR 1B	<u>Habitat</u> : Occurs in vernal pools. <u>Elevation</u> : 0-200 meters <u>Blooms</u> : February-April	Present . This species was documented within the southern section of the Plan Area in 1992 along a river terrace west of I-5, where it is presumed extant (CDFW 2024). In 2004, alkali-sink goldfields were documented approximately 2.75 miles east of the Plan Area in the Alkali sink Ecological Reserve (CDFW 2024). Open/natural lands of the Plan Area containing vernal pools or other seasonal wetland features provide potentially suitable habitat for this species.
Munz's tidy-tips (<i>Layia munzii</i>)	CRPR 1B	<u>Habitat</u> : Occurs in chenopod scrub, and valley and foothill grassland. Occurs on hillsides in white-grey alkaline clay soils, with grasses and chenopod scrub associates. <u>Elevation</u> : 45-765 meters <u>Blooms</u> : March-April	Possible . This species has been historically documented at several locations within the Plan Area at locations which no longer appear to support suitable habitat for this species (CDFW 2024). Open/natural lands of the Plan Area containing alkaline clay soils provide potentially suitable habitat for this species.

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TABLE 4.4-2 (CONT'D)
SPECIAL-STATUS SPECIES THAT COULD OCCUR IN THE VCIP PLAN AREA AND VICINITY

PLANTS (adapted from CDFW 2024 and CNPS2024) <i>Species Listed by CNPS</i>			
Species	Status	Habitat	*Occurrence in the Plan Area
Panoche pepper-grass (<i>Lepidium jaredii</i> ssp. <i>Album</i>)	CRPR 1B	<u>Habitat</u> : Occurs in valley and foothill grasslands, often in alluvial fans and washes. Found on white or grey clay lenses on steep slopes, in clay and gypsum-rich soils. <u>Elevation</u> : 65-1005 meters <u>Blooms</u> : February-June	Present. This species has been documented in wetland and grassland habitats within the northern end of the Plan Area as recently as 2015 between I-5 and the California Aqueduct and is presumed extant in this location (CDFW 2024). Open/natural lands and natural water/wetlands of the Plan Area provide potentially suitable habitat for this species.
Showy golden madia (<i>Madia radiata</i>)	CRPR 1B	<u>Habitat</u> : Occurs in valley and foothill grassland, and cismontane woodland. Mostly found on adobe clay, in grassland or among shrubs. <u>Elevation</u> : 75-1220 meters <u>Blooms</u> : March-May	Present. A historical occurrence of showy golden madia was documented in the Plan Area in a stream bed near I-5 in 1988 where it is presumed extant. This species has been observed approximately 1.6 miles from the Plan Area as recently as 2016 in the foothills of the Southern Coastal Range (Calflora 2024). Potentially suitable habitat for showy golden madia is present only in open/natural lands and water/wetlands on the western side of the Plan, primarily west of I-5.
Indian Valley bush-mallow (<i>Malacothamnus aboriginum</i>)	CNPS 1B	<u>Habitat</u> : Occurs on granitic outcrops and sandy bare soil, often in disturbed or burned areas in cismontane woodland, and chaparral. <u>Elevation</u> : 150-1130 meters <u>Blooms</u> : April-October	Present. This species was documented within the Plan Area south of the Highway 33 and I-5 intersection along a creek in 1998 and is presumed extant in this location (CDFW 2024). Potentially suitable habitat for Indian Valley bush-mallow is present in open/natural lands and water/wetlands on the western edge of the Plan Area as well as ruderal/developed lands.

ANIMALS (adapted from CDFW or 2024 and CNPS 2024) <i>Species Listed as Threatened</i> <i>Endangered under the State</i> <i>and/or Federal Endangered Species Act</i>			
Species	Status	Habitat	*Occurrence in the Plan area
Longhorn fairy shrimp (<i>Branchinecta longiantenna</i>)	FE	Occurs in seasonal wetlands and vernal pools of California.	Possible. Longhorn fairy shrimp were documented within the Plan Area as recently as 2009 in vernal pools within alkali sinks and California annual grassland on the eastern edge of the Plan Area, south of Highway 180 and east of Highway 33 (CDFW 2024). Potentially suitable habitat for longhorn fairy shrimp in the form of vernal pools is present in the Plan Area.

*See end of table for explanation of Occurrence Designations and Status Codes.

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TABLE 4.4-2 (CONT'D)
SPECIAL-STATUS SPECIES THAT COULD OCCUR IN THE VCIP PLAN AREA AND VICINITY

ANIMALS (adapted from Species Listed as Threatened)	CDFW or	2024 and CNPS 2024) Endangered under the State	and/or Federal Endangered Species Act
Species	Status	Habitat	*Occurrence in the Plan Area
Valley elderberry longhorn beetle (<i>Desmocerus californicus dimorphus</i>)	FT	Lives in mature elderberry shrubs of California's Central Valley and Sierra Foothills.	Absent. The USFWS does not consider Fresno County as currently being within this species' range.
Crotch's bumble bee (<i>Bombus crotchii</i>)	CC	In California, in open grassland and scrub habitats of the southern two-thirds of California. Historically in, but largely extirpated from, the Central Valley. Flight period for queens is late February to late October peaking in April and July. Flight period for males and workers is March through September peaking in early July. Constructs nests underground in animal burrows. Overwintering sites are likely in soft soils or in debris or leaf litter.	Possible. Crotch's bumblebee was last observed within the Plan Area in 1971 near the City of Huron, CA (CDFW 2024). Potentially suitable habitat for foraging and nesting is present in open/natural lands and could occur in fallow/idle cropland.
California tiger salamander (<i>Ambystoma californiense</i>)	FT, CT	Breeds in vernal pools and stock ponds of central California; adults aestivate in grassland habitats adjacent to the breeding sites.	Absent. No historical or current records of this species are known within the region. Intensively cultivated lands provide unsuitable habitat for this species.
Western spadefoot toad (<i>Spea hammondi</i>)	CSC, FC	Primarily occurs in grasslands, but also occurs in valley and foothill hardwood woodlands. Requires vernal pools or other temporary wetlands for breeding.	Present. This species has been documented in the Plan Area as recently as 2011 in a retention basin in the north-central portion of the Plan Area, within the Levis quadrangle. Five occurrences of Western spadefoot toad were also documented within the south-central portion of the Plan Area, near the City of Huron, between the years of 2001 to 2003 (CDFW 2024). Temporary wetlands required for breeding are present in the Plan Area, including retention basins and irrigation ponds. Terrestrial habitat required for estivation (dormancy during hot and dry season) is present in non-agricultural fields and orchards.

*See end of table for explanation of Occurrence Designations and Status Codes.

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TABLE 4.4-2 (CONT'D)
SPECIAL-STATUS SPECIES THAT COULD OCCUR IN THE VCIP PLAN AREA AND VICINITY

ANIMALS (adapted from <i>Species Listed as Threatened</i>)	CDFW or	2024 and CNPS 2024) <i>Endangered under the State</i>	<i>and/or Federal Endangered Species Act</i>
Species	Status	Habitat	*Occurrence in the Plan Area
Giant garter snake (<i>Thamnophis gigas</i>)	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. Giant garter snake eDNA was detected in 2016 or 2017 near the Plan Area in the Mendota Dam quadrangle (the most southern known range of this species) (CDFW 2024). Potentially suitable habitats for this species are limited to suitable streams and canals in the Mendota Dam quadrangle outside the Plan Area.
Northwestern pond turtle (<i>Actinemys marmorata</i>)	FC	Intermittent and permanent waterways including streams, marshes, rivers, ponds and lakes.	Possible. The northwestern pond turtle has not been documented within the Plan Area. However, this species was documented approximately 3 miles east of the Plan Area in the Fresno Slough with tule and cattails in 2001 (CDFW 2024). Marginal habitat, in the form of canals and associated ponds exist within the Plan Area. These areas could provide marginal habitat for estivation and breeding.
Temblor legless lizard (<i>Anniella alexanderae</i>)	CC	The Temblor legless lizard (previously called silvery legless lizard) occurs mostly underground in warm moist areas with loose soil and substrate and is known only from two sites west of Highway 33 at the base of the Temblor Range between McKittrick and Taft in Kern County.	Absent. The Plan Area is outside of the known range of the Temblor legless lizard.

*See end of table for explanation of Occurrence Designations and Status Codes.

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TABLE 4.4-2 (CONT'D)
SPECIAL-STATUS SPECIES THAT COULD OCCUR IN THE VCIP PLAN AREA AND VICINITY

ANIMALS (adapted from <i>Species Listed as Threatened</i>)	CDFW or	2024 and CNPS 2024) <i>Endangered under the State</i>	<i>and/or Federal Endangered Species Act</i>
Species	Status	Habitat	*Occurrence in the Plan Area
Blunt-nosed leopard lizard (<i>Gambelia silus</i>)	FE, CE, CP	Frequents grasslands, alkali meadows and chenopod scrub of the San Joaquin Valley from Merced south to Kern County.	Possible/Unlikely. The blunt-nosed leopard lizard (BNLL) was last documented in the vicinity of the Plan Area in 1993 in areas west of I-5, including the Panoche Hills and the Pleasant Valley Ecological Preserve in habitats including riparian corridors, valley annual grasslands, and saltbush scrub with grasses. Outside of the Plan Area, the BNLL was last documented in disturbed non-native grassland less than a quarter mile west of the Plan Area in 2008 approximately 3 miles east of the intersection of Lost Hills Road and West Firestone Avenue (CDFW 2024). Potentially suitable habitat for this species is limited in the Plan Area, with the only potentially suitable habitat occurring in open/natural lands. The BNLL is unlikely to occur east of I-5 where habitats required by the blunt-nosed leopard lizard have been highly disturbed or eliminated as a result of agricultural activities, mainly regular discing.
Swainson's hawk (<i>Buteo swainsoni</i>)	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. Swainson's hawks were observed foraging over agricultural fields of the Plan Area during the 2024 survey. Foraging and nesting habitat is available throughout the Plan Area. Riparian habitat and lone trees suitable for nesting occur throughout the Plan Area.
Burrowing owl (<i>Athene cunicularia</i>)	CC, 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. There are 17 documented records of burrowing owls within the Plan Area, with the most recent from 2016 (CDFW 2024). Foraging and nesting habitat in the form of ground squirrel burrows, other burrows, and culverts exists in the Plan Area. Burrowing owls will nest in fallow/idle cropland, open/natural lands, along banks of any canals, irrigation ditches, or streams, and the margins of farm access roads. Ground squirrel burrows were observed along canals and the California Aqueduct during the 2024 field survey. Burrowing owls will forage throughout the Plan Area in alfalfa or other hay and row crops but are less likely to nest in those areas.

*See end of table for explanation of Occurrence Designations and Status Codes.

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TABLE 4.4-2 (CONT'D)
SPECIAL-STATUS SPECIES THAT COULD OCCUR IN THE VCIP PLAN AREA AND VICINITY

ANIMALS (adapted from Species Listed as Threatened)	CDFW or	2024 and CNPS 2024) Endangered under the State	and/or Federal Endangered Species Act
Species	Status	Habitat	*Occurrence in the Plan Area
Tricolored blackbird (<i>Agelaius tricolor</i>)	CSC	Breeds near fresh water, primarily emergent wetlands, with tall thickets (wheat fields and Himalayan blackberry). Forages in grassland and cropland habitats.	Possible. The most recently documented occurrence of the tricolored blackbird within the Plan Area was in 1997 in the northwestern portion of the Plan Area where 1,000 non-nesting birds were observed. In 1994, 200-600 presumed nesting birds were observed among cattails in the northwestern portion of the Plan Area. The most recent occurrence within a five-mile buffer of the Plan Area was documented in 2014 approximately 4.7 miles southwest of the Plan Area in a small pond with cottonwoods and has been a known breeding site since 1992 (CDFW 2024). Therefore, potentially suitable foraging and minimal breeding habitat occurs within the Plan Area, with breeding habitat being limited to wheat fields, cattails, tules, and other thick vegetation appropriate for the species.
San Joaquin antelope squirrel (<i>Ammospermophilus nelsoni</i>)	CT	Frequents open shrublands and annual grassland habitats in central and western San Joaquin Valley and nearby Inner Coast Ranges to the west of the valley.	Possible. The most recently documented occurrence of San Joaquin antelope squirrel within the Plan Area was in 1944 approximately nine miles east of Coalinga, and the most recent documented occurrence within a five-mile radius of the Plan Area was in 2017 approximately 1.73 miles west of Plan Area on east side of the Ciervo Hills (CDFW 2024). Habitats required by San Joaquin antelope squirrel are highly restricted in Plan Area. Potentially suitable habitats occur in open/natural lands west of I-5 and may also occur east of I-5 in open/natural lands.
Giant kangaroo rat (<i>Dipodomys ingens</i>)	FE, CE	Inhabits grasslands on gentle slopes generally less than 10°, with friable, sandy-loam soils.	Possible/Unlikely. The most recently documented occurrences of the giant kangaroo rat within the Plan Area as in 1992 west of I-5 where colonies were observed at the base of the foothills of the Inner Coastal Range over several miles. The most recently documented occurrence within a five-mile radius of the Plan Area occurred approximately 2.5 miles west of the Plan Area, on the north end of the Tumey Hills (CDFW 2024). Habitat required by giant kangaroo rats is marginal within the Plan Area. This species is most likely to occur in open/natural lands west of I-5. Habitat for the giant kangaroo rat is unlikely to occur in the open/natural lands east of I-5 within the Plan Area.

*See end of table for explanation of Occurrence Designations and Status Codes.

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TABLE 4.4-2 (CONT'D)
SPECIAL-STATUS SPECIES THAT COULD OCCUR IN THE VCIP PLAN AREA AND VICINITY

ANIMALS (adapted from Species Listed as Threatened)	CDFW or	2024 and CNPS 2024) Endangered under the State	and/or Federal Endangered Species Act
Species	Status	Habitat	*Occurrence in the Plan Area
San Joaquin kit fox (<i>Vulpes macrotis mutica</i>)	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.	Possible. There have been few to no recorded observations of the San Joaquin kit fox in the last 25 to 30 years within the Plan Area. The most recent documented observation within the Plan Area occurred in 1997 in the northern portion of the Plan Area and west of the California Aqueduct. This individual was observed foraging in a canal near a recently cultivated field and agricultural lands. Outside of the Plan Area, but within a five-mile radius, four individuals and a den were documented approximately 4.5 miles west of the Plan Area in the Coalinga quadrangle in 2002 (CDFW 2024). The San Joaquin kit fox may occasionally forage on or disperse through the Plan Area. However, denning habitat within the Plan Area is limited and restricted to open/natural lands and fallow/idle croplands due to the common use of intensive farming practices in the region.
Fresno kangaroo rat (<i>Dipodomys nitratoides exilis</i>)	FE, CE	Inhabits grassland on gentle slopes generally less than 10°, with friable, sandy-loam soils.	Absent. This species has not been documented within the Plan Area. The most recent occurrence of the Fresno kangaroo rat within a five-mile radius of the Plan Area was in 2003 approximately 3.87 miles east of the Plan Area in the Alkali Sink Ecological Reserve (CDFW 2024). Habitats required by this species are absent from the Plan Area due to intensive agricultural developments, urbanization, and transportation infrastructure.
Tipton kangaroo rat (<i>Dipodomys nitratoides nitratoides</i>)	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 most recently documented occurrence of the Tipton kangaroo rat in the vicinity of the Plan Area was in 2008, approximately four miles east of Lemoore Station in alkali scrub habitat in Kings County (CDFW 2024). This species only occurs east of the CA Aqueduct. Suitable habitat within the species range does not occur in the Plan Area.
Ringtail (<i>Bassariscus astutus</i>)	CP	Riparian and heavily wooded habitats near water.	Absent. Habitat for this species is absent from the Plan Area.

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TABLE 4.4-2 (CONT'D)
SPECIAL-STATUS SPECIES THAT COULD OCCUR IN THE WSP VICINITY

ANIMALS (adapted from Species of Special Concern		CDFW	2024 and CNPS 2024)	
Species	Status	Habitat	*Occurrence in the Plan area	
San Joaquin coachwhip (<i>Masticophis flagellum ruddocki</i>)	CSC	Chenopod scrub Valley & foothill grassland; Open, dry habitats with little or no tree cover. Found in valley grassland and saltbush scrub in the San Joaquin Valley. Needs mammal burrows for refuge and oviposition sites.	Possible. Marginally suitable grassland habitat for the San Joaquin coachwhip is present in open/natural lands within the Plan Area.	
California glossy snake (<i>Arizona elegans occidentalis</i>)	CSC	Occurs in arid areas with grassland, scrub, chaparral, and rocky washes. This species is nocturnal and spends the day in burrows.	Possible. Potentially suitable habitat for the California glossy snake is present in the Plan Area in both open/natural lands and fallow/idle croplands with wild grassland habitat.	
Northern harrier (<i>Circus cyaneus</i>)	CSC	Frequents meadows, grasslands, open rangelands, freshwater emergent wetlands; uncommon in wooded habitats.	Present. Northern harriers were observed foraging over agricultural fields of the Plan Area during the 2024 survey. This species is known to nest and roost on the ground in grasslands and agricultural fields, and may occur within the Plan Area in alfalfa, fallow/idle croplands, row crops such as wheat, and open/natural lands.	
Mountain plover (<i>Charadrius montanus</i>)	CSC	Forages in short grasslands and freshly plowed fields of the Central Valley.	Possible. The mountain plover has not been observed within the Plan Area. However, 60 wintering mountain plovers were documented in a barren fallow field surrounded by agricultural land within five miles of the northern end of the Plan Area in 2004 (CDFW 2024). The Plan Area provides suitable winter foraging habitat for the mountain plover.	
Short-eared owl (<i>Asio flammeus</i>)	CSC	Occur in wide open spaces including marshes, open shrublands, grassland, prairie, and agricultural field habitats, and need dense ground cover to conceal nests.	Possible. This species was last observed within the Plan Area between I-5 and the California Aqueduct in 1993. Two separate observations, each of a separate pair of adults, possibly nesting, occurred in cultivated fields of tall nonnative grassland (CDFW 2024). Short-eared owls may use the Plan Area for foraging, and possibly also for nesting.	
Long-eared owl (<i>Asio otus</i>)	CSC	Occur on edge habitats including in clumps of trees or edges of open forests that are adjacent to grasslands, shrublands, wetlands, marshes, and farmlands. Need stick nests built by other birds in trees.	Possible. The most recent recorded observation of the long-eared owl within the Plan Area occurred in 2005 when an adult, possibly breeding, was observed in a grove of tall tamarisks west of I-5 near Phelps Avenue (CDFW 2024). Long-eared owls forage on the Plan Area and nest in trees along open fields.	

*See end of table for explanation of Occurrence Designations and Status Codes.

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TABLE 4.4-2 (CONT'D)
SPECIAL-STATUS SPECIES THAT COULD OCCUR IN THE WSP VICINITY

ANIMALS (adapted from CDFW 2024 and CNPS 2024) <i>Species of Special Concern</i>			
Species	Status	Habitat	*Occurrence in the Plan area
Loggerhead shrike (<i>Lanius ludovicianus</i>)	CSC	Frequents open habitats with sparse shrubs and trees, other suitable perches, bare ground, and low herbaceous cover. Nests in tall shrubs and dense trees. Forages in grasslands, marshes, and ruderal habitats. Can often be found in cropland.	Present. Loggerhead shrikes were observed during the 2024 survey. Foraging and nesting habitat occurs in the Plan Area.
Le Conte's thrasher (<i>Toxostoma lecontei</i>)	CSC	Occurs in open desert scrub, alkali desert scrub, desert succulent scrub, and desert washes and flats habitats with saltbush. Needs tall robust saltbushes for nesting.	Unlikely. There is minimally suitable habitat for this species in the Plan Area.
Yellow-headed blackbird (<i>Xanthocephalus xanthocephalus</i>)	CSC	Occurs in freshwater marshes with cattails, tule, and bulrush during the summer and open, cultivated fields and pastures in the winter.	Possible. The yellow-headed blackbird was documented just south of the Plan Area in Kings County in 2016, in marsh vegetation along a large canal surrounded by active and fallow agricultural fields. This yellow-headed blackbird colony extended for one to two miles along the canal (CDFW 2024). Freshwater habitat is present in the Plan Area, providing foraging and possible breeding habitat for this species.
Pallid bat (<i>Antrozous pallidus</i>)	CSC	Occurs in grasslands, chaparral, woodlands, and forests; most common in dry rocky open areas providing roosting opportunities. Roost sites include caves, mines, rock crevices, and large cavities of trees.	Possible. There are no records for pallid bats within the Plan Area. However, this species is known to occasionally forage in agricultural fields. The pallid bat may roost in various human-made structures within the ruderal/developed lands of the Plan Area, as well as in cavities of mature oak trees and other potential tree cavities and structures which are present within the some of the habitats of the Plan Area.
Western mastiff bat (<i>Eumops perotis ssp. californicus</i>)	CSC	Frequents open, semi-arid to arid habitats, including conifer, and deciduous woodlands, coastal scrub, grasslands, palm oasis, chaparral and urban. Requires tall locations for roosting in cliff faces and high buildings.	Possible. The western mastiff bat may forage in the Plan Area, but suitable roosting habitat is absent from the Plan Area.

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TABLE 4.4-2 (CONT'D)
SPECIAL-STATUS SPECIES THAT COULD OCCUR IN THE WSP VICINITY

ANIMALS (adapted from <i>Species of Special Concern</i>)		CDFW	2024 and CNPS 2024)
Species	Status	Habitat	*Occurrence in the Plan area
Short-nosed kangaroo rat (<i>Dipodomys nitratoideus brevinasus</i>)	CSC	Occurs in lighter, powdery soils such as the sandy bottoms and banks of arroyos and other sandy areas with slightly to highly saline soils on gently sloping and rolling low hill-tops with shrubs.	Possible/Unlikely. The short-nosed kangaroo rat was last seen in the Plan Area in 1999 on the west side of I-5 in nonnative grassland with scattered salt brush scrub (<i>Atriplex</i> sp.) along the edge of a creek where one adult male was caught and released. The most recent observation outside of the Plan Area but within a five-mile buffer, was seen just 0.39 miles south of the far western edge of the Plan Area in a willow and scrub community on the terraces of a creek surrounded by grassland and pasture, where three short-nosed kangaroo rats were salvage-trapped due to planned pipeline excavation. Habitats required by short-nosed kangaroo rats are present in the Plan Area and surrounding agricultural lands. Short-nosed kangaroo rats occur on the west side of the California Aqueduct.
Tulare grasshopper mouse (<i>Onychomys torridus</i>)	CSC	Arid shrubland communities in hot, arid grassland and scrub desert associations. These include blue oak woodlands at 450 meters (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.	Unlikely. The most recent observation of the Tulare grasshopper mouse within the Plan Area occurred in 2019, along the western edge of Interstate-5 in salt brush scrub with sandy soils. Suitable shrubland habitat is marginal within the Plan Area.
American badger (<i>Taxidea taxus</i>)	CSC	Found in drier open stages of most shrub, forest and herbaceous habitats with friable soils.	Possible. The most recent occurrence of American badger within the Plan Area was in 2005 on the western edge of the Plan Area along a creek in allscale saltbrush (<i>Atriplex polycarpa</i>) and California annual grassland habitat alliances where one badger was photographed. Outside of the Plan Area but within a five-mile buffer, the American badger was most recently recorded approximately 4.5 miles northeast of the central eastern edge of the Plan Area in annual grasslands surrounded by agricultural land, where multiple badgers and dens were observed. Suitable habitat for the American badger is present in the Plan Area in open/natural lands and fallow/idle croplands.

*See end of table for explanation of Occurrence Designations and Status Codes.

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***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.

***Explanation of Occurrence Designations and Status Codes (Continued)**

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 more information is needed – a review list
- 4 Plants of limited distribution – a watch list

Endangered, Threatened, or Special-Status Animal Species Meriting Further Discussion

The species below are species that either: 1) have protected status as a Candidate species under the California Endangered Species Act while CDFW decides whether the petitioned listings may be warranted, and are therefore somewhat new to their inclusion in the threatened/ endangered discussion; or 2) they have special considerations, such as large ranges or they are a regionally important species.

Crotch's Bumble Bee

Federal Listing Status: None; *State Listing Status:* Candidate as Endangered under California Endangered Species Act. While this species is being evaluated for listing under the federal Endangered Species Act, it is treated as a federally Threatened species.

Legal status. The Xerces Society, Center for Biological Diversity and Center for Food Safety petitioned the California Fish and Game Commission to list the Crotch's bumble bee as Endangered under the California Endangered Species Act (CESA). The Commission voted to advance it to candidacy in 2019. The California Court of Appeal upheld the Commission's 2019 decision, and the California Supreme

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Court declined to review the case. On September 30, 2022, the Commission reinstated the Crotch's bumble bee as a candidate under CESA, meaning they receive the same legal protection afforded to endangered or threatened species (CDFW 2022).

Life history and ecology. In California, this species inhabits open grassland and scrub habitats of the southern two-thirds of California. It has been historically found in, but is now largely extirpated from, the Central Valley. Flight period for queens is late February to late October peaking in April and July; flight period for males and workers is March through September peaking in early July. This species constructs nests underground in animal burrows. Overwintering sites are likely in soft soils or in debris or leaf litter.

Potential to occur within the Plan Area. Crotch's bumblebee was last observed within the Plan Area in 1971 near the City of Huron (CDFW 2024). Potentially suitable habitat for foraging and nesting is present in open/natural lands and could occur in fallow/idle cropland.

Northwestern Pond Turtle

Federal Listing Status: Proposed Threatened; *State Listing Status:* Species of Special Concern. While this species is being evaluated for listing, it is treated as a federally Threatened species.

Life History and Ecology. The northwestern 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. This species can move along streams up to 3.1 miles in a short period of time, and they can tolerate at least seven days without water.

Potential to Occur within the Plan Area. Although the northwestern pond turtle has not been documented within the Plan Area, it has been documented approximately three miles east of the Plan Area in the Fresno Slough with tule and cattails in 2001. As such, there is a potential for northwestern pond turtle to occur in portions of the Plan Area containing perennial or near perennial waters, including canals and ponds.

Blunt-Nosed Leopard Lizard

Federal Listing Status: Endangered; *State Listing Status:* Endangered; California Protected.

In addition to being listed as 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 CDFW cannot issue a "take" permit for fully protected species, and most projects with fully protected species are required to completely avoid direct "take" of the species. However, pursuant to SB 147, effective July 10, 2023, an exception was passed for wind and solar projects, which allows CDFW to issue a "take" permit for fully protected species through December 31, 2033. (Fish & Game Code, section 2081.15(b)(4)-(5)). In this instance, "take" refers to direct harm, injury, or killing of an individual, not to habitat modifications (Fish & Game Code, section 86; *cf.* federal ESA as discussed below).

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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.

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 Plan Area. There are a total of 11 records of the blunt-nosed leopard lizard occurring within the Plan Area with the last documented records from 1993 in areas west of I-5, including the Panoche Hills and the Pleasant Valley Ecological Preserve. Multiple historical and museum records also exist in the Plan Area with all but two records being west of I-5 in habitats including riparian corridors, valley annual grasslands, and saltbush scrub with grasses. Outside of the Plan Area but in the vicinity of the Plan Area, the BNLL was last documented in disturbed non-native grassland less than a quarter mile west of the Plan Area in 2008 approximately 3 miles east of the intersection of Lost Hills Road and West Firestone Avenue.

Given the decades of ground disturbance that has occurred in the Plan Area from agricultural use, the Plan Area provides no habitat in cultivated fields and provides extremely marginal habitat in fallowed areas of the Plan Area east of I-5. Therefore, it would be extremely unlikely that BNLL would occur within the Plan Area, except within potentially suitable habitat in open/natural lands west of I-5.

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 in or peripherally to 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 female will lay and incubate two to four eggs for approximately 28 to 35 days. The male helps with incubation when the female leaves the nest to feed. The young hatch sometime between March and July and do not leave the nest until some 4 to 6 weeks later. Swainson's

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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 Plan Area. Swainson's hawks are known to forage within the Plan Area and surrounding region. The trees along the San Joaquin River, Delta-Mendota Canal, Fresno Slough, Kings River just outside the Plan Area as well as other riparian habitat, other groupings of trees, and lone trees throughout the Plan Area and vicinity of the Plan Area provide potentially suitable nesting habitat for the Swainson's hawk. Swainson's hawks were observed foraging over agricultural fields of the Plan Area during LOA's 2024 survey. Foraging and nesting habitat is available throughout the Plan Area. Riparian habitat and lone trees suitable for nesting occur throughout the Plan Area and the fallow and agricultural lands within the Plan Area provide suitable foraging habitat.

In summary, Swainson's hawks are present within the Plan Area and likely forage within the Plan Area throughout the months of March through September and may possibly nest in trees within and outside the Plan Area.

Burrowing Owl

Federal Listing Status: None; *State Listing Status:* Candidate Species for listing as State Endangered or State Threatened.

On October 9, 2024, the burrowing owl was designated as a Candidate Species for state listing as threatened or endangered. This designation was based on the species' declining population within the state over the past 40 years, and until such time that the Fish and Game Commission reaches a final decision, the species is treated as listed by the state. The population decline is mainly due to habitat destruction resulting from development and agricultural practices (CDFW 2024a, 2024b).

Life History and Ecology. The burrowing owl is a small, long-legged bird with an average height of 9.5 inches, an average wingspan of 23 inches, and average weight 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 San Joaquin Valley 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 Plan Area. There are 17 documented records of burrowing owls within the Plan Area, with the most recent from 2016. Foraging and nesting habitat in the form of ground squirrel burrows, other burrows, and culverts exist in the Plan Area. Ground squirrel burrows were observed along canals and the California Aqueduct during LOA's 2024 field survey. Burrowing owls will forage

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throughout the Plan Area in alfalfa or other hay and row crops but are less likely to nest in those areas. The Plan Area provides suitable habitat for this species in the form of California ground squirrel burrows and other burrows and culverts present in fallow/idle cropland, open/natural lands, along the banks of any canals, irrigation ditches, or streams, and the margins of farm access roads.

San Joaquin Antelope Squirrel

Federal Listing Status: None; *State Listing Status:* Threatened.

The San Joaquin Antelope Squirrel (SJAS) is listed as Threatened under CESA. The species does not have its own recovery plan but is included in the Recovery Plan of Upland Species of San Joaquin Valley, California (USFWS 1998).

Life history and ecology. The SJAS is one of five subspecies in the genus *Ammospermophilus*. This genus is generally confined to desert and arid steppe habitats and open shrubland communities in the southwest United States and portions of Mexico. Adults weigh between 130 and 170 grams. They have a fusiform shape typical of ground dwelling squirrels. They are buffy tan, have a light stripe on their sides, and have lighter fur on the ventor. They are much smaller than the California ground squirrel, and have a shorter, less bushy, flatter tail.

SJAS are found in arid annual grassland and shrublands and are numerous in areas with sparse to moderate cover of shrubs including saltbush, ephedra (*Ephedra* sp.), bladderpod (*Isomeris arborea*), golden bushes (*Isocoma* sp.), matchweed and others. SJAS are present but tend to sparsely inhabit shrubless areas. SJAS use shrubs and burrows to escape predators and escape the heat of the sun. They may for this reason be somewhat dependent on kangaroo rats whose burrows they may enlarge and takeover. The range of the giant kangaroo rat overlaps extensively with the SJAS, but microhabitats may differ. SJAS are also associated with friable (crumbly texture) soils.

SJAS breed in late winter and early spring. Young do not breed in the first year. Gestation is 26 days, and there are six to 11 embryos. Young are born in March and April and emerge from the burrow after 30 days. The young are weaned as early as late April to late May. These squirrels are generally omnivorous eating green vegetation, fungi, insects (primarily grasshoppers), and seeds (including filaree, brome, ephedra, and saltbush). SJAS are diurnal.

Potential to occur within the Plan Area. The most recently documented occurrence of the SJAS within the Plan Area was in 1944 approximately nine miles east of Coalinga, and the most recent documented occurrence within a five-mile radius of the Plan Area was in 2017 approximately 1.73 miles west of the Plan Area on the east side of the Ciervo Hills. Habitats required by the SJAS are highly restricted in the Plan Area. Potentially suitable habitats occur in open/natural lands west of I-5 and may also occur east of I-5 in open/natural lands. The Plan Area east of I-5 has been largely heavily managed for agricultural uses for decades with a limited amount of open/natural lands. Agricultural lands are not generally suitable for the SJAS.

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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 Plan Area. There have been little to no recorded observations of the San Joaquin kit fox in the last 25 to 30 years within the Plan Area. The most recent documented observation within the Plan Area occurred in 1997 in the northern portion of the Plan Area and west of the California Aqueduct. This individual was observed foraging in a canal near a recently cultivated field and agricultural lands. Outside of the Plan Area, but within a five-mile radius, four individuals and a den were documented approximately 4.5 miles west of the Plan Area in the Coalinga quadrangle in 2002. The San Joaquin kit fox may occasionally forage on or disperse through the Plan Area. However, denning habitat within the Plan Area is limited and restricted to open/natural lands and fallow/idle croplands due to the common use of intensive farming practices in the region. The majority of the Plan Area has been heavily managed for agricultural uses for decades. Agricultural lands are not generally suitable for the San Joaquin kit fox. Having been modified for agricultural use, the Plan Area provides a limited prey base especially in the cultivated fields and, therefore, constitutes poor foraging habitat for kit fox. Open/natural lands and fallow idle croplands within the Plan Area offer marginal foraging habitat.

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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 4.4.2. *Regulatory Context* below for detailed discussion of these agencies' roles and responsibilities.

Hydrologic features in the Plan Area include the San Luis Canal/California Aqueduct, canals and some ephemeral drainages that are expected to be dry nearly the entire year. The Plan Area also likely supports a few vernal pools and seasonal wetlands along its eastern boundary. The San Luis Canal/California Aqueduct is considered unlikely to be jurisdictional by the USACE.

Ephemeral drainages are not likely to meet the criteria to be jurisdictional by the USACE, RWQCB and CDFW. However, specifics and contexts are important and whether any of these agencies would exert jurisdiction over such a feature can only be ascertained by conferring with each agency.

Vernal pools and seasonal wetlands on the other hand, while likely meeting the criteria of the USACE will only be considered jurisdictional if they have a continuous surface connection with a body of water that is itself a "water of the United States". The RWQCB will likely consider these features as waters of the state. Section 1602 of the Fish and Game Code provides CDFW jurisdiction over the bed, channel, or bank of any river, stream, or lake. Thus, CDFW lacks jurisdiction over vernal pools or seasonal wetlands as these features lack the requisite characteristics of bed and bank.

4.4.2. Regulatory Context

The following is an overview of the principal statutes, regulations, plans and programs related to biological resources that may apply to the VCIP.

Federal and State Regulations

Threatened and Endangered Species

State and federal "endangered species" legislation has provided the CDFW and 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 CNPS 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," which may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns (16 United States Code (U.S.C.), section {AM0010.1}

1532(19); 50 Code of Federal Regulations (CFR), section 17.3). In addition, CDFW and USFWS are responsible agencies under CEQA. Both agencies review CEQA documents to determine the adequacy of their treatment of endangered species issues and to make project-specific recommendations for their conservation.

In the 1960s, pre-dating the federal and state endangered species acts (ESA and CESA), the California Fish and Game Commission designated several species as fully protected. Subject to certain exceptions, these fully protected species may not be taken or possessed at any time (e.g., Fish and Game Code, sections 3511 [fully protected birds], 4700 [fully protected mammals], 5050 [fully protected reptiles and amphibians]). Unless one of these exceptions applies, fully protected status does not allow for incidental take of species due to otherwise lawful activities. Relevant to the proposed VCIP, in 2023, Senate Bill 147, amended the fully protected species statutes, creating a permitting process (i.e., that follows the conservation standard of the Natural Community Conservation Plan (NCCP) Act) for the take of fully protected species for certain projects including the maintenance, or improvements of the State Water Project, transportation projects, wind projects and solar photovoltaic projects.

Migratory Birds

Most bird species are also protected by state and federal law. The federal Migratory Bird Treaty Act (MBTA) (16 U.S.C., section 703) 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. In 2019, the California Legislature passed Assembly Bill (AB) 454, which clarifies native bird protection and increases protections where California law previously deferred to federal law.

Birds of Prey

Birds of prey are also protected in California under provisions of the Fish and Game Code, section 3503.5, which states that it is “unlawful to take, possess, or destroy any birds in the orders 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 CDFW.

Additionally, the Bald and Golden Eagle Protection Act (16 U.S.C., sections 668-668d) prohibits anyone from taking bald or golden eagles, including their parts, nests, or eggs, unless authorized under a federal permit. The act prohibits any disturbance that directly affects an eagle or an active eagle nest as well as any disturbance caused by humans around a previously used nest site during a time when eagles are not present such that it agitates or bothers an eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death or nest abandonment.

Safe Harbor Agreement

A Safe Harbor Agreement is a voluntary agreement between private or other non-federal property owners and the USFWS or the National Oceanic and Atmospheric Administration (NOAA), with the goal for non-federal property owners to contribute to the recovery of endangered or threatened species

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under the ESA. If the landowners contribute as promised, the USFWS or NOAA will not require any additional or different management activities by the participants without their consent (USFWS 2025).

Examples of conservation benefits include:

- maintenance, restoration, or enhancement of existing habitats;
- reduced habitat fragmentation; increases in habitat connectivity;
- stabilized or increased numbers or distribution;
- the creation of buffers for protected areas; and
- opportunities to test and develop new habitat management techniques.

Jurisdictional Waters and Wetlands

Federal

Section 404 of the federal Clean Water Act (CWA) regulates the discharge of dredged or fill material into “navigable waters” (33 U.S.C., section 1344), defined in the CWA as “the waters of the United States, including the territorial seas” (33 U.S.C., section 1362(7)). The CWA does not supply a definition for waters of the U.S., and that has been the subject of considerable debate since the CWA’s passage in 1972. A variety of regulatory definitions have been promulgated by the two federal agencies responsible for implementing the CWA, the Environmental Protection Agency (EPA) and the U.S. Army Corps of Engineers (USACE). These definitions have been interpreted, and in some cases, invalidated, by federal courts.

Waters of the U.S. are currently defined by the EPA and USACE’s joint 2023 Revised Definition of ‘Waters of the U.S.’ Rule (2023 WOTUS Rule)(Fed. Reg. 2023), with certain interpretive modifications imposed by the U.S. Supreme Court’s May 25, 2023 decision in the case of *Sackett v. Environmental Protection Agency*. Under the current definition, these waters include:

- 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.
- The territorial seas.
- Interstate waters, including interstate wetlands.
- Impoundments of waters otherwise defined as waters of the United States under the definition.
- Tributaries to other waters of the U.S. that are relatively permanent, standing or continuously flowing bodies of water.
- Wetlands adjacent to other waters of the U.S. that have a continuous surface connection to those waters.

The 2023 WOTUS Rule also defines several exclusions from the definition of waters of the U.S., many of which are longstanding exclusions from earlier regulatory regimes. These generally include:

- Waste treatment systems.
- Prior converted cropland.
- Ditches excavated wholly in and draining only dry land that do not carry a relatively permanent flow of water.
- Certain artificial features, e.g., irrigation basins, swimming pools, borrow pits, and artificially irrigated areas.
- Swales and erosional features characterized by low volume, infrequent, or short duration flow.

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All activities that involve the discharge of dredge or fill material into waters of the U.S. are subject to the permit requirements of the USACE. Such permits are typically issued on the condition that the applicant agrees to provide mitigation that results in no net loss of wetland functions or values.

State of California

Under the Porter-Cologne Water Quality Control Act of 1969, the State Water Resources Control Board (SWRCB) has regulatory authority to protect the water quality of all surface water and groundwater in the State of California (“waters of the State”). Nine Regional Water Quality Control Boards (RWQCBs) oversee water quality at the local and regional level. The RWQCB for a given region regulates discharges of fill or pollutants into waters of the State through the issuance of various permits and orders. Discharges into waters of the State that are also waters of the U.S. require a section 401 (CWA) Water Quality Certification from the RWQCB as a prerequisite to obtaining a section 404 CWA permit. Discharges into waters of the State that are not also waters of the U.S. require Waste Discharge Requirements (WDRs), or waivers of WDRs, from the RWQCB.

CDFW has jurisdiction over the bed and bank of natural drainages and lakes according to provisions of sections 1601 and 1602 of the California Fish and Game Code. Activities that may substantially modify such waters through the diversion or obstruction of their natural flow, change or use of any material from their bed or bank, or the deposition of debris require a Notification of Lake or Streambed Alteration. If CDFW determines that the activity may adversely affect fish and wildlife resources, a Lake or Streambed Alteration Agreement will be prepared. Such an agreement typically provides that certain measures will be implemented to protect the habitat values of the lake or drainage in question.

Habitat Conservation Plans (HCPs) and Natural Community Conservation Plans (NCCPs)

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. 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 non-federal entities to obtain an incidental take permit (ITP) for otherwise lawful projects that might result in the take of an endangered or threatened species (16 U.S.C., section 1539(a)(1)(B)). To receive an ITP, the applicant must satisfy certain requirements, including the design and implementation of a Habitat Conservation Plan (HCP) that will minimize and mitigate harm to the impacted species during the proposed project (16 U.S.C., section 1539(a)(2)(A)).

The State of California’s Natural Community Conservation Planning Act (NCCP Act), enacted in 1991, and now codified as Fish and Game Code section 2800 et seq., authorizes 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 (see Fish & Game Code, sections 2801, 2820). 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 (Fish & Game Code, section 2820(a)(5)). 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 (CDFW 2025).

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Recovery Plan area for Upland Species of the San Joaquin Valley

The *Recovery Plan area for Upland Species of the San Joaquin Valley* (Recovery Plan) developed by the U.S. Fish and Wildlife Service covers 34 species of plant 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 plan includes information on recovery criteria, habitat protection, umbrella and keystone species, monitoring and research program, adaptive management, and economic and social considerations.

The Recovery Plan shows the northern portion of the Plan Area being mapped as “Proposed areas where connectivity and linkages should be promoted,” and the natural hills west of I-5 are likely used by native wildlife as a corridor along the foothills. Much of the foothill area west of Interstate 5, just outside the Plan Area boundary, is mapped as “[a]reas along the valley’s edges within which a contiguous band of natural lands and wildlife-compatible farmlands which should be maintained.”

The western edge of the Plan Area is adjacent to the Ciervo-Panoche Natural Area, which the Recovery Plan defines as “natural lands along the western edge of the Valley and in the contiguous foothills and coastal range, from the Panoche Hills and Valley, Fresno and San Benito Counties, south to Anticline Ridge near Coalinga, Fresno County.” The Ciervo-Panoche Natural Area encompasses an area of approximately one-half million acres in the Coastal Ranges immediately west of the Plan Area. Within this Natural Area, the goals of the Recovery Plan are to protect the natural lands to facilitate the recovery of specific species and to maintain and enhance existing movement corridors as well as connecting other natural lands within the recovery area.

Fresno County

Fresno County General Plan

The Fresno County General Plan (Fresno County 2024b) contains the following goals and policies related to biological resources that may be relevant to the VCIP:

Open Space and Conservation Element

D. Wetland and Riparian Areas

GOAL OS-D To conserve the function and values of wetland communities and related riparian areas throughout Fresno County while allowing compatible uses where appropriate. Protection of these resource functions will positively affect aesthetics, water quality, floodplain management, ecological function, and recreation/tourism.

Policy OS-D.1 **No-Net-Loss Wetlands Policy**
The County shall support the “no-net-loss” wetlands policies of the US Army Corps of Engineers, the US Fish and Wildlife Service, and the California Department of Fish and Wildlife. Coordination with these agencies at all levels of project review shall continue to ensure that appropriate mitigation measures and the concerns of these agencies are adequately addressed.

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Policy OS-D.2 Wetland Loss Mitigation

The County shall require new development to fully mitigate wetland loss for function and value in regulated wetlands to achieve "no-net-loss" through any combination of avoidance, minimization, or compensation. The County shall support mitigation banking programs that provide the opportunity to mitigate impacts to rare, threatened, and endangered species and/or the habitat which supports these species in wetland and riparian areas.

Policy OS-D.3 Adjacent Wetland Protection

The County shall require development to be designed in such a manner that pollutants and siltation do not significantly degrade the area, value, or function of wetlands. The County shall require new developments to implement the use of Best Management Practices (BMPs) to aid in this effort.

Policy OS-D.4 Riparian Protection Zones

The County shall require riparian protection zones around natural watercourses and shall recognize that these areas provide highly valuable wildlife habitat. Riparian protection zones shall include the bed and bank of both low- and high-flow channels and associated riparian vegetation, the band of riparian vegetation outside the high-flow channel, and buffers of 100 feet in width as measured from the top of the bank of unvegetated channels and 50 feet in width as measured from the outer edge of the dripline of riparian vegetation.

Policy OS-D.5 Upland Habitat Protection

The County shall strive to identify and conserve remaining upland habitat areas adjacent to wetland and riparian areas that are critical to the feeding, hibernation, or nesting of wildlife species associated with these wetland and riparian areas.

E. Fish and Wildlife Habitat

GOAL OS-E To help protect, restore, and enhance habitats in Fresno County that support fish and wildlife species so that populations are maintained at viable levels.

Policy OS-E.1 Avoid Habitat Loss

The County shall support efforts to avoid the "net" loss of important wildlife habitat where practicable. In cases where habitat loss cannot be avoided, the County shall impose adequate mitigation for the loss of wildlife habitat that is critical to supporting special-status species and/or other valuable or unique wildlife resources. Mitigation shall be at sufficient ratios to replace the function and value of the habitat that was removed or degraded. Mitigation may be achieved through any combination of creation, restoration, conservation easements, and/or mitigation banking. Conservation easements should include provisions for maintenance and management in perpetuity. The County shall recommend coordination with the US Fish and Wildlife Service and the California Department of Fish and Wildlife to ensure that appropriate mitigation measures and the concerns of these agencies are adequately addressed.

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Important habitat and habitat components include nesting, breeding, and foraging areas, important spawning grounds, migratory routes, migratory stopover areas, oak woodlands, vernal pools, wildlife movement corridors, and other unique wildlife habitats (e.g., alkali scrub) critical to protecting and sustaining wildlife populations.

Policy OS-E.2**Construction Buffers**

The County shall require adequate buffer zones between construction activities and significant wildlife resources, including both onsite habitats that are purposely avoided and significant habitats that are adjacent to the project site, in order to avoid the degradation and disruption of critical life cycle activities such as breeding and feeding. The width of the buffer zone should vary depending on the location, species, etc. A final determination shall be made based on informal consultation with the US Fish and Wildlife Service and/or the California Department of Fish and Wildlife.

Policy OS-E.3**Wildlife Habitat Protection**

The County shall require development in areas known to have particular value for wildlife to be carefully planned and, where possible, located so that the value of the habitat for wildlife is maintained.

Policy OS-E.8**Pest Control**

The County shall promote effective methods of pest (e.g., ground squirrel) control on croplands bordering sensitive habitat that do not place special-status species at risk, such as the San Joaquin kit fox.

Policy OS-E.9**Biological Resource Evaluation**

Prior to approval of discretionary development permits, the County shall require, as part of any required environmental review process, a biological resources evaluation of the project site by a qualified biologist. The evaluation shall be based on field reconnaissance performed at the appropriate time of year to determine the presence or absence of significant resources and/or special-status plants or animals. Such evaluation will consider the potential for significant impact on these resources and will either identify feasible mitigation measures or indicate why mitigation is not feasible.

Policy OS-E.17**Endangered Species Habitat**

The County should preserve, to the maximum possible extent, areas defined as habitats for rare or endangered animal and plant species in a natural state consistent with State and Federal endangered species laws.

Policy OS-E.19**Nesting Birds**

For development projects on sites where tree or vegetation/habitat removal is necessary and where the existence of sensitive species and/or bird species protected by California Fish and Game Wildlife Code Sections 3503 and 3503.5 and 305.33503.5 and Migratory Bird Treaty Act has been determined by a

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qualified biologist, surveys for nesting birds shall be conducted within 14 days prior to project activities by a qualified biologist for all construction sites where activities occurring during nesting bird season (February 1 through September 15). The surveys shall include the entire disturbance area plus at least a 500-foot buffer around the project site.

If active nests are located, all construction work shall be conducted outside a buffer zone from the nest to be determined by the qualified biologist. The buffer shall be a minimum of 250 feet for non-raptor bird species and at least 500 feet for raptor species, unless determined otherwise by the qualified biologist. Buffer distances for bird nests shall be site-specific and an appropriate distance, as determined by a qualified biologist. The buffer distances shall be specified to protect the bird's normal behavior thereby preventing nesting failure or abandonment. The buffer distance recommendation shall be developed after field investigations that evaluate the bird(s) apparent distress in the presence of people or equipment at various distances. Abnormal nesting behaviors which may cause reproductive harm include, but are not limited to, defensive flights/vocalizations directed towards project personnel, standing up from a brooding position, and flying away from the nest. The qualified biologist shall have authority to order the cessation of all nearby project activities if the nesting birds exhibit abnormal behavior which may cause reproductive failure (nest abandonment and loss of eggs and/or young) until an appropriate buffer is established.

Larger buffers may be required depending upon the status of the nest and the construction activities occurring in the vicinity of the nest. The buffer area(s) shall be closed to all construction personnel and equipment until the adults and young are no longer reliant on the nest site. A qualified biologist shall confirm that breeding/nesting is completed, and young have fledged the nest prior to removal of the buffer. The biologist shall submit a report of these preconstruction nesting bird surveys to the County to document compliance within 30 days of its completion.

F. Vegetation

GOAL OS-F To preserve and protect the valuable vegetation resources of Fresno County.

Policy OS-F.1 **Terrain and Vegetation Preservation**

The County shall encourage landowners and developers to preserve the integrity of existing terrain and natural vegetation in visually-sensitive areas such as hillsides and ridges, and along important transportation corridors, consistent with fire hazard and property line clearing requirements.

Policy OS-F.3 **Significant Natural Vegetation Areas**

The County shall support the preservation of significant areas of natural vegetation, including, but not limited to, oak woodlands, riparian areas, and vernal pools.

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Policy OS-F.4**Landmark Trees**

The County shall ensure that landmark trees are preserved and protected whenever possible.

Policy OS-F.5**Rare, Threatened, and Endangered Species**

The County shall establish procedures for identifying and preserving rare, threatened, and endangered plant species that may be adversely affected by public or private development projects. As part of this process, the County shall require, as part of the environmental review process, a biological resources evaluation of the project site by a qualified biologist. The evaluation shall be based on field reconnaissance performed at the appropriate time of year to determine the presence or absence of significant plant resources and/or special-status plant species. Such evaluation shall consider the potential for significant impact on these resources and shall either identify feasible mitigation measures or indicate why mitigation is not feasible.

Fresno County Code

The Fresno County Code of Ordinances (County Code) (Fresno County 2024c) 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(A)(5) 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 County Code includes no other specific provisions or requirements related to the protection of trees or biological resources that may be applicable to the VCIP.

4.4.3. Environmental Impact Analysis

METHODOLOGY

Evaluation of potential impacts related to biological resources was based on the biological evaluation report prepared for the VCIP by LOA in May 2025. The LOA report is incorporated into this PEIR by reference, as provided under CEQA Guidelines section 15150. The LOA report is contained in Appendix C of this PEIR.

Sources of information used in the LOA’s analysis included: 1) the *California Natural Diversity Data Base* (CDFG 2024); 2) the *Online Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2024); and 3) manuals, reports, and references related to plan area and animals of the San Joaquin Valley region. The USDA’s *Land Cover Database* was applied to create habitat mapping of the Plan Area (see Figure 3). LOA ecologists conducted a field survey of the Plan Area in July 2024 to confirm general habitat conditions on-the-ground as mapped from the USDA land cover database. This reconnaissance survey also identified the principal land uses and the potential for special-status plant and animal species as well as sensitive habitats to occur within the Plan Area.

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SIGNIFICANCE CRITERIA

Based on Appendix G of the state CEQA Guidelines, implementation of the proposed VCIP would be considered to result in a significant impact related to 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 Wildlife or U.S. Fish and Wildlife Service.
- 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 Wildlife or U.S. Fish and Wildlife Service.
- c. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.
- d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.
- e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
- f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

4.4.3.1. DIRECT AND INDIRECT EFFECTS

Introduction

Implementation of the proposed VCIP would allow multiple individual solar generation, energy storage, and infrastructure facilities within the Plan Area. The potential solar and energy storage projects would be developed within specific areas of the Plan Area known as DFAs. The DFAs would comprise a total of approximately 136,000 acres within the approximately 535,000-acre Plan Area. Most of the habitats in the Plan Area are unsuitable for those special-status plant and animal species that occur regionally. Nonetheless, potentially suitable habitats do occur in scattered locations throughout the Plan Area. This PEIR provides guidance at a programmatic level regarding the potential occurrence of protected species as indicated by their affinity for the specific habitat types identified and mapped for the Plan Area.

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Impact BIO-1. Impacts to Special-Status Plants

Implementation of the VCIP Energy Resource and Infrastructure Plans could have a potentially substantial adverse impact on 11 special-status plant species that may be present within the Plan Area. (*Less-than-Significant Impact with Mitigation*)

Eleven special-status plant species have some potential to occur within the Plan Area. These species and their corresponding habitats are summarized in Table 4.4-3 below. (For detailed summaries, see Table 4.4-2 in Section 4.4.1. *Environmental Setting*.)

Table 4.4-3

Special-Status Plant Species which may occur within the Plan Area by Habitat Type

Species	Alfalfa	Fallow/Idle Croplands	Open/Natural Lands	Orchard/Vineyard	Row and Field Crops	Water/Wetlands/ Riparian Woodland	Woodlands	Ruderal/Developed	Other Qualifiers
California jewelflower (<i>Caulanthus californicus</i>)			X						West of I-5
San Joaquin woollythreads (<i>Monolopia congdonii</i>)			X						
Lost Hills Crownscale (<i>Atriplex coronata vallicola</i>)			X			X			Alkaline soils
Hall's tarplant (<i>Deinandra halliana</i>)			X						
Recurved larkspur (<i>Delphinium recurvatum</i>)			X						Alkaline soils
Hoover's eriastrum (<i>Eriastrum hooveri</i>)			X			X			
Alkali-sink goldfields (<i>Lasthenia chrysantha</i>)			X			X			Vernal pools or other seasonal wetlands
Munz's tidy-tips (<i>Layia munzii</i>)			X						Alkaline clay soils
Panoche pepper-grass (<i>Lepidium jaredii ssp. album</i>)			X			X			
Showy golden madia (<i>Madia radiata</i>)			X			X			
Indian Valley bush-mallow (<i>Malacothamnus aboriginu</i>)			X			X		X	

Source: Live Oak Associates

As shown in Table 4.4-3, special-status plant species are not expected to occur over the majority of the Plan Area, with most species occurring in open/natural lands and water/wetlands habitats except for the Indian Valley bush-mallow which may also occur in ruderal/developed habitats. Individuals and populations of rare plants could be damaged or destroyed if any of the plant species noted in Table 4.4-3 occur in areas proposed to be developed or disturbed. Therefore, the implementation of VCIP energy and infrastructure projects could result in potentially *significant impacts* to special-status plants. With implementation of Mitigation Measure (MM) BIO-1, potential impacts to special-status plants would be avoided or substantially reduced to *less than significant*.

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Mitigation Measure BIO-1: Protection of Special-Status Plant Species:

To avoid potentially significant impacts to special-status plant species due to VCIP implementation, the following mitigation measures are applicable at the project-specific level:

- a) **Initial Biological Site Survey and Land Cover Mapping:** Prior to site-specific project approval and any ground disturbance, a qualified biologist shall be retained to conduct an initial biological site survey and prepare land cover maps that delineate the habitat types present on the project site. Based on the habitat types found to be present on the project site, the biologist shall identify the specific species of protected plants, if any, that shall be subject to pre-construction surveys to be conducted prior to ground-disturbing activities for the project.
- b) **Pre-construction Surveys:** If potentially suitable habitats are detected on an individual project site during initial site surveys and land cover mapping, and prior to the initial ground disturbance for the project, a qualified biologist shall conduct a protocol-level rare plant survey following CDFW's 2018 *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* or the most recent CDFW guidelines. The survey shall target all suitable habitats of the project site that would be subject to project-related ground disturbance, and shall be conducted during appropriate times of year, when local populations of the target species are in bloom and readily identifiable. If suitable habitats are found to be absent, or if special-status plant species are found to be absent from the site, no further action is required.
- c) **Avoidance:** If individuals or populations of the target plant species are identified in planned disturbance areas, project design shall be modified, to the extent feasible, to avoid the plants. A qualified biologist shall identify an appropriate buffer around the plants, and no construction or other project-related activities shall be permitted within the area demarcated for the special-status plant species.
- d) **Relocation/Salvage:** If it is not feasible to avoid individuals or populations of rare plant species observed on a project site, the affected populations shall be salvaged in accordance with a plan prepared by a qualified biologist and approved by CDFW that shall include contingencies for an unsuccessful salvage effort. Salvage methods may include seed collection and dispersal, and/or topsoil collection and redistribution, as appropriate to the species. The replacement planting and/or relocation area(s) shall be located on portions of the project site that support suitable habitat and soils for the affected species and that will not be subject to project-related ground disturbance. A replacement planting area shall occupy the same area (no net-loss of area) of the new population. A relocation area shall occupy a larger area than the original area (net-gain of area). Replacement planting and relocation areas shall be monitored for a period of five years to ensure successful establishment. Although annual plants' success in any single year depends on climatic conditions year-to-year, on average, replacement and/or relocation shall be implemented to achieve no net loss through replacement plantings that occupy the same area (no net-loss of area) of the new population, and relocation areas that occupy a larger area than the original area (net-gain of area). In addition, if federally protected rare plants are present on the site, the project proponent may be required to consult with the USFWS if there is a federal nexus for the individual project.

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Significance After Mitigation: Less-than-significant impact. Project-level application of the above mitigation measures during construction and decommissioning of the proposed VCIP energy resource and infrastructure projects would avoid or substantially reduce potential impacts to special-status plant species to *less than significant*.

Impact BIO-2. Impacts to Special-Status Animals

Implementation of the VCIP Energy Resource and Infrastructure Plans could have a potentially substantial adverse impact on special-status animal species that may utilize the Plan Area as breeding and/or foraging habitat. (*Less-than-Significant Impact with Mitigation*)

Of the 32 special-status animal species listed in Table 4.4-2 that potentially occur in the region, eight species would be absent or unlikely to occur within the Plan Area due to unsuitable habitat conditions or because the Plan Area is outside the species' range. These include the valley elderberry longhorn beetle, California tiger salamander, giant garter snake, Temblor legless lizard, Le Conte's thrasher, Fresno kangaroo rat, Tipton kangaroo rat, and ringtail. Development of individual 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*.

Ten species that may regularly or occasionally utilize the Plan Area only for foraging include San Joaquin coachwhip, California glossy snake, northern harrier, mountain plover, short-eared owls, long-eared owl, loggerhead shrike, tricolored blackbird, yellow-headed blackbird, and Tulare grasshopper mouse. The Plan Area does not provide breeding habitat or regionally important foraging habitat for these species. Considerable habitat suitable for migratory movements and winter foraging would continue to be available for these species on other lands within the region following development of the proposed VCIP energy and infrastructure projects. Therefore, development of potential projects under the proposed VCIP would result in a *less-than-significant* impact to these species.

An additional 14 special-status animal species listed in Table 4.4-2 potentially occur frequently as regular foragers and may be residents to the area. These include the longhorn fairy shrimp, Crotch's bumble bee, western spadefoot, northwestern pond turtle, blunt-nosed leopard lizard, Swainson's hawk, burrowing owl, giant kangaroo rat, short-nosed kangaroo rat, San Joaquin antelope squirrel, pallid bat, California mastiff bat, American badger, and San Joaquin kit fox. The Plan Area does not provide regionally important foraging habitat for most of these species, except for the potential to impact foraging habitat for the Swainson's hawk and burrowing owl, which are addressed under Impacts BIO-8 and BIO-9, respectively. Considerable habitat suitable for migratory movements and winter foraging would continue to be available for the other noted species on other lands within the region following development of VCIP energy and infrastructure projects. Therefore, development of potential projects under the proposed VCIP would result in a *less-than-significant impact* on these species' foraging habitat.

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Although implementation of the proposed VCIP would not have potentially adverse effects on foraging habitat for 13 of the species mentioned above, the breeding habitat and individual members of these species would be subject to potentially substantial impacts from VCIP projects. The potential for a VCIP project to result in injury or mortality to an individual of a special-status animal species would represent a *significant impact*. With implementation of MM BIO-2, the potential impact would be avoided or substantially reduced to *less than significant*.

Mitigation Measure BIO-2: Protection of Special-Status Animal Species

To avoid potentially significant impacts to special-status animal species due to VCIP implementation, the following mitigation measures are applicable at the project-specific level:

- a) **Initial Biological Site Surveys and Land Cover Mapping:** Prior to site-specific project approval and any ground disturbance, a qualified biologist shall be retained to conduct an initial biological site survey and prepare land cover maps that delineate the habitat types present on the project site. Based on the habitat types found to be present on the project site, the biologist shall identify the specific species of protected animals, if any, that shall be subject to pre-construction surveys to be conducted prior to ground-disturbing activities for the project, as specified for each species in Mitigation Measures BIO-3 through BIO-13.
- b) **Minimization Measures:** If individuals of any special-status animal species that are considered to occur rarely to occasionally within the Plan Area are found to be present on a project site prior to or during project construction, the animal(s) shall be allowed to move off-site independently. Alternatively, a qualified biologist may assist the individual(s) with moving off the project site.

Significance After Mitigation: *Less-than-significant impact.* Project-level application of the above mitigation measures during construction and decommissioning of the proposed VCIP energy resource and infrastructure projects would avoid or substantially reduce potential impacts to special-status animal species to *less than significant*.

In addition to direct injury or mortality impacts to special-status animal species, these and other species would also be subject to noise and vibration during construction, operation, and decommissioning. However, if effects associated with construction disturbance would have a substantial adverse effect on these species, individuals of the species would move or be relocated away from the noise source, as discussed in MM BIO-2b. The effects of construction disturbance would be largely temporary since the completed facilities would still provide opportunities for regionally occurring wildlife to forage, breed, and pass through the site.

Noise and vibration from construction would potentially disrupt breeding behavior. To provide projections from breeding disturbance, MMs 3.3.4 through 3.3.14 establish setback distances or buffers from breeding sites which are intended to minimize the effects of disturbance including noise and vibration.

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Impact BIO-3. Disturbance to Active Raptor and Migratory Bird Nests

Implementation of the VCIP Energy Resource and Infrastructure Plans could result in disturbance to active nests of raptors and migratory birds. (*Less-than-Significant Impact with Mitigation*)

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, red-tailed hawk, bald eagle, golden eagle, short-eared owl, and long-eared owl are known to forage near the Plan Area or could potentially do so. Additionally, the Plan Area provides nesting habitat for several migratory bird species, including, but not limited to, the common raven, house finch, and Brewer's blackbird. Other migratory birds that could occur in the Plan Area include the white-faced ibis, mountain plover, short-eared owl, long-eared owl, Loggerhead shrike, California horned lark, tricolored blackbird, and yellow-headed blackbird, among others. Nearly all native bird species are protected by the federal Migratory Bird Treaty Act. The Aqueduct habitat, as well as habitat around ephemeral drainages, power towers/poles, trees, shrubs, and open ground on and adjacent to the Plan Area, provide potential nesting habitat for these species. If birds were to nest in these areas in the future prior to construction, such project-related activities could result in the abandonment of active nests or direct mortality to these birds. Construction activities that adversely affect the nesting success of raptors or migratory birds or result in mortality of individual birds would violate state and federal laws and would be considered a significant impact under CEQA. With implementation of MM BIO-3, the potential impact would be avoided or substantially reduced to *less than significant*.

[See Impact BIO-15 for discussion of hazards to avian species from collision and electrocution.]

Mitigation Measure BIO-3: Protection of Raptor and Migratory Bird Nests

To minimize disturbance to any active raptor and other bird nests due to VCIP implementation, the following mitigation measures are applicable at the project-specific level:

- 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 10 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 the project site, the qualified biologist shall monitor identified nests to establish a behavioral baseline. Once work commences, the qualified biologist should monitor all nests to detect any behavioral changes because of the project. If behavioral changes are observed, stop the work causing that change and consult with the California Department of Fish and Wildlife for additional avoidance and minimization measures.
- c) **Establish Exclusion Zones.** Alternatively, should any active nests be discovered in or near planned construction zones, the qualified biologist shall establish an appropriate construction-

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free buffer (exclusion zone) around the nest depending on the species of bird, activity level of the area, and terrain. This exclusion zone shall be identified on the ground with flagging or fencing and shall be maintained until the qualified biologist has determined that the young have fledged.

- d) **Tailgate Training for Workers.** All construction and operations workers on the project site shall be trained by a qualified biologist. The tailgate (on-site) 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 to avoid birds falling into the pipes and getting stuck.
- e) **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 the project site, the poles shall be capped immediately after installation to prevent entrapment of birds.

Significance After Mitigation: *Less-than-significant impact.* Project-level application of the above mitigation measures during construction and decommissioning of the potential VCIP energy resource and infrastructure projects would avoid or substantially reduce potential impacts to nesting raptors and migratory bird species to *less than significant*.

Impact BIO-4. Impacts to Longhorn Fairy Shrimp

Implementation of the VCIP Energy Resource and Infrastructure Plans could result in potentially substantial adverse impacts to longhorn fairy shrimp, a federally listed endangered species. (*Less-than-Significant Impact with Mitigation*)

The longhorn fairy shrimp, a federally listed endangered species, is a small freshwater shrimp which lives in vernal pools and seasonal wetlands. The shrimp's eggs lay dormant in the dry pools during the summer and hatch when winter rains fill the pools. A vernal pool is a natural pool that fills up seasonally and dries down in the dry season which supports a number of plant and animal species endemic to that unique environment. Vernal pools typically must hold water for two months for this fairy shrimp species to complete its lifecycle. Within the Plan Area and its vicinity, vernal pool landscapes have almost entirely been converted to agriculture. Agricultural activities, such as tilling, permanently damage the thick but highly sensitive clay layer that prevents the water in each vernal pool from percolating into the underlying groundwater. The loss of this clay layer results in the permanent loss of vernal pools. As the Plan Area has been highly modified through historical and current agricultural operations, the Plan Area generally lacks vernal pools. Vernal pools and seasonal wetlands are very limited within the Plan Area, and are present only in a few locations on the eastern margins of the Plan Area. As such, the potential for the occurrence of the longhorn fairy shrimp is limited within the Plan Area. Any impact to vernal pools or seasonal wetlands supporting longhorn fairy shrimp would constitute a significant impact to the species. With implementation of MM BIO-4, the potential impact would be avoided or substantially reduced to *less-than-significant*.

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Mitigation Measure BIO-4: Protection of Longhorn Fairy Shrimp

To minimize potentially significant impacts to longhorn fairy shrimp due to VCIP implementation, the following mitigation measures are applicable at the project-specific level:

- a) **Habitat Survey.** Conduct initial biological survey and habitat mapping for the project as set forth in Mitigation Measure BIO-1a. If the initial biological survey on the project site determines that vernal pools or seasonal wetlands are present on the site, the project proponent may either assume presence of the longhorn fairy shrimp, or conduct protocol surveys as specified in Mitigation Measure BIO-4b. Protocol surveys for longhorn fairy shrimp are not required if the initial biological survey determines suitable habitats are absent from the project site.
- b) **Species-Specific Surveys.** If suitable habitats are present on the project site protocol surveys during normal rainfall years, consisting of either (1) surveys in two wet seasons, or (2) one wet season and one dry season survey are required to demonstrate the species is absent from an individual project site. Wet-season sampling entails the sampling of all pools at 10-day intervals after the pools have filled with water. Ten to 12 sampling visits are generally required during a winter of average rainfall, depending on rainfall patterns, with the results reported to the USFWS. The USFWS can reject negative findings from any wet season survey if conditions are below normal in rainfall or if the rainfall pattern was highly skewed (e.g., all falling within a very short period). Dry season surveying involves collecting soil from the bottoms of on-site vernal pools, examining the soil for potential longhorn fairy shrimp eggs, and, if any potential longhorn fairy shrimp eggs are identified, rearing shrimp from these eggs to determine if they are longhorn fairy shrimp. The USFWS will consider listed vernal pool species to be absent from a site if two wet season surveys are negative, or if a dry season survey combined with a subsequent wet season survey in a normal year are negative. If protocol surveys do not detect presence of longhorn fairy shrimp on the project site, no mitigation is required.

If longhorn fairy shrimp are observed early in the survey period and the USFWS agrees that continuing the surveys after shrimp have been found is unnecessary, then further surveys would not be required, and all vernal pool habitat on the site shall be considered inhabited by this species.

Alternatively, the entire survey effort could be foregone and the presence of this species on the site may be presumed with the understanding that doing so would require mitigation measures for the take of this species.

- c) **Obtain “Take” Authorization.** Direct and possibly indirect disturbance to vernal pools of the site would be considered a “take” of this federally listed species if this species is detected or if presence is assumed by the project proponent. The “take” of this species would require the project proponent obtain take authorization from the USFWS under Section 7 of the federal Endangered Species Act (ESA) (applicable if there is federal nexus, such as the requirement for Section 404 permit under the federal Clean Water Act for fill of a jurisdictional wetland) or Section 10 (if no federal nexus). If the project has a federal nexus, then a Section 7 consultation process must be initiated by the USACE (the applicable federal permitting

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agency) prior to the issuance of the Section 404 permit. Once the consultation process has formally begun, the USFWS has 135 days to issue either a Biological Opinion (BO), which would authorize the take of a listed species incidental to the implementation of a lawful project, or a jeopardy opinion (which is rare) which would determine that the “take” of the listed species would jeopardize the continued existence of the species. If there is no federal nexus, the project proponent would need to obtain take authorization under Section 10 of the ESA, which is a process administered by the USFWS Endangered Species Branch in Sacramento.

- d) **Typical Mitigation Measures.** Take authorization would require avoidance and minimization measures, as well as compensatory mitigation measures which would reduce the magnitude of the “take” of this species. Current mitigation standards of the USFWS for this species consist of the following: 1) a 250-foot buffer around avoided pools in which fairy shrimp occur; 2) the preservation of existing fairy shrimp habitat at a 2:1 ratio; and 3) the creation of new shrimp habitat at a 1:1 ratio. The preservation requirement can be met by purchasing preservation credits from an agency approved mitigation bank and the creation requirement can be met by purchasing vernal pool creation credits from either the applicable in-lieu fee program or a USACE approved mitigation bank.

Indirect impacts to preserved vernal pool habitat can generally be avoided if a development-free buffer of 250 feet is provided around preserved pools. A buffer of this size may not be sufficient if the planned development is within the watershed of the pool such that runoff drains from developed areas of the project site into the vernal pool or deprives the vernal pool of natural runoff water.

Significance After Mitigation: Less-than-significant impact. Project-level application of the above mitigation measures during construction and decommissioning of the potential VCIP energy resource and infrastructure projects would avoid or substantially reduce potential impacts to longhorn fairy shrimp to *less than significant*.

Impact BIO-5. Impacts to Crotch’s Bumble Bee

Implementation of the VCIP Energy Resource and Infrastructure Plans could result in potentially substantial adverse impacts to Crotch’s bumble bee, a candidate species for state listing as threatened or endangered. (*Less-than-Significant Impact with Mitigation*)

Potentially suitable habitat for foraging and nesting for the Crotch’s bumble bee is present in open/natural lands and could occur in fallow/idle cropland within the Plan Area. The remainder of the Plan Area does not contain suitable habitat for this species. Grading and disturbance to areas occupied by the Crotch’s bumble bee would constitute a potentially significant impact to this species. With implementation of MM BIO-5, the potential impact would be avoided or substantially reduced to *less than significant*.

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Mitigation Measure BIO-5: Protection of the Crotch's Bumble Bee

To minimize impacts to the Crotch's bumble bee due to VCIP implementation, the following mitigation measures are applicable at the project-specific level:

- a) **Habitat Assessment.** Conduct initial biological survey and habitat mapping for the project as set forth in Mitigation Measure BIO-1a. If the initial biological survey on the project site determines that there is no potential for Crotch's bumble bee to occur on the site, no additional surveys are required. If there is potential for the species to occur on the site, conduct pre-construction surveys as specified in Mitigation Measure BIO-5b.
- b) **Preconstruction Surveys.** A qualified biologist shall conduct pre-construction surveys during the three stages of Crotch's bumble bee flight period with a methodology approved by CDFW, as provided in CDFW's 2023 *Survey Considerations for California Endangered Species Act (CESA) Candidate Bumble Bee Species* or its most recent guidance document. This survey shall be conducted during the season prior to the start of work (i.e., if work is scheduled to start in the late summer, surveys may be conducted that same year; if work is scheduled to start in winter or early spring, the surveys shall occur during the year before the year construction is scheduled). If Crotch's bumble bees are observed on the site, intensive surveys shall be required as specified in Mitigation Measure BIO-5c.
- c) **Intensive Surveys and Take Avoidance.** If Crotch's bumble bees are observed on the site, intensive surveys to locate underground nests shall be conducted. If an underground nest is located, individuals at the nest shall be photographed to confirm species. If the underground nest is confirmed to be occupied by Crotch's bumble bees, the nest shall be flagged and a 25-foot exclusion zone established around the nest. An avoidance plan shall be developed in consultation with CDFW prior to any project work and/or vegetation removal or other ground disturbance within the 25-foot exclusion zone.
- d) **Compensation.** If Crotch's bumble bee is found to be present on-site and if take avoidance is not feasible, then a mitigation plan that provides for on- or off-site compensation shall be prepared and implemented. The mitigation plan shall provide for a minimum of a 1:1 replacement ratio of suitable habitat, at an onsite or offsite location. The plan shall define measures to restore and/or enhance existing habitat, management strategies to maintain the conservation value of the habitat in perpetuity, and a funding source for the ongoing management of the mitigation site.

If the Crotch's bumble bee is permanently listed as threatened or endangered prior to the time of project development, the project proponent will be required to obtain an Incidental Take Permit from CDFW under the California Endangered Species Act (CESA). If the California Fish and Game Commission decides to not list the Crotch's bumble bee under the CESA, then implementation of Mitigation Measures BIO-5b through BIO-5d would not be required.

Significance After Mitigation: **Less-than-significant impact.** Project-level application of the above mitigation measures during construction and decommissioning of the potential VCIP energy resource and infrastructure projects would avoid or substantially reduce potential impacts to the Crotch's bumble bee to *less than significant*.

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Impact BIO-6. Impacts to Western Spadefoot Toad and Northwestern Pond Turtle

Implementation of the VCIP Energy Resource and Infrastructure Plans could result in potentially substantial adverse impacts to western spadefoot toad and northwestern pond turtle. (*Less-than-Significant Impact with Mitigation*)

These two species occur in and around water features. The western spadefoot toad has the potential to occur within vernal pools, ephemeral drainages, irrigation ponds, and retention basins within the Plan Area. The northwestern pond turtle has the potential to occur within irrigation ponds, retention basins, and canals and may nest near these features within the Plan Area. Project construction activities could cause harm or injury to these species if an individual of these species is present on a project site or moves onto the site prior to ground disturbing activities. This would be considered a potentially *significant impact*. With implementation of MM BIO-6, the potential impact would be avoided or substantially reduced to *less than significant*.

Mitigation Measure BIO-6: Protection of the Western Spadefoot Toad and Northwestern Pond Turtle

To reduce the likelihood of mortality to the western spadefoot and northwestern pond turtle due to VCIP implementation, the following mitigation measures are applicable at the project-specific level:

- a) **Habitat Assessment.** Conduct initial biological survey and habitat mapping for each project as set forth in Mitigation Measure BIO-1a. If the initial biological survey on the project site determines that there is no suitable breeding habitat for western spadefoot toad (i.e., vernal pools or ephemeral pools, including some ponded water which holds water for at least two weeks to one month), no species-specific surveys for the western spadefoot are required. If suitable breeding habitat for western spadefoot is present on the project site, then in addition to Mitigation Measure BIO-6c, the project proponent shall either implement Mitigation Measure BIO-6b (elective surveys) or BIO-6d (assumed presence).

If suitable habitat for the northwestern pond turtle is present on the project site, then Mitigation Measure BIO-6c would be required to be implemented.

- b) **Elective Species-Specific Surveys.** Instead of assuming the presence of western spadefoot pursuant to Mitigation Measure BIO-6d, the project proponent may retain a qualified biologist to survey the project site for the presence of suitable habitat for western spadefoot during the appropriate times in March, April, and May in an at least average rain year when any western spadefoot would be above ground and observable. If western spadefoot toads are identified at or near wetland features, those features shall have exclusion zones established, as specified in MM BIO-6d, prior to ground disturbing activity associated with the project, as specified in Mitigation Measure BIO-6c.
- c) **Preconstruction Surveys.** During the course of the construction surveys for other species, a qualified biologist shall also determine the presence or absence of western spadefoot toads and suitable breeding habitat for this species (i.e., vernal pools or ephemeral pools, including some ponded water which holds water for at least two weeks to one month) prior to the start

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of ground disturbing activities. The absence of western spadefoot can only be confirmed through the species-specific surveys described in MM BIO-6b. Thus, if only pre-construction surveys for other species are conducted for western spadefoot, then the presence of western spadefoot shall be assumed pursuant to MM BIO-6d.

Pre-construction surveys for the northwestern pond turtle shall also be conducted during this time. If construction is scheduled to begin during northwestern pond turtle nesting season (late May through mid-July), a qualified biologist shall conduct a survey within the project site for nests within 1,000 feet of any suitable water feature. If a northwestern turtle nest is observed, a construction-free buffer shall be established by the qualified biologist around the nest until young have hatched and moved from the nest. If spadefoot or northwestern pond turtle individuals of these species are found to be present on a project site prior to or during project construction, they shall be allowed to move off-site independently. Alternatively, a qualified biologist may assist the individual(s) with moving off the project site.

- d) **Avoidance and Monitoring.** If a northwestern pond turtle is identified during pre-construction surveys within any area subject to project impacts, the turtle shall be avoided until it has moved out of the work area on its own or relocated by the qualified biologist.

If potential breeding habitat for western spadefoot is identified during preconstruction surveys within or immediately adjacent to an area subject to project impacts, and species-specific surveys described in MM BIO-6b have not been conducted, then presence of the western spadefoot on the site shall be assumed. A project activity-buffer of 860 feet (262 meters) from those breeding pools shall be established, as this is the maximum distance spadefoot toads have been recorded away from their breeding pool. This distance is necessary, as spadefoot toads dig straight down and leave no trace on the surface of where they are located, and they spend most of their lives underground—without an indication of where they are buried; therefore, a conservative buffer must be established. Buffers shall remain until absence can be confirmed through appropriate surveys as specified in MM BIO-6b.

- e) **Compensation.** If impacts to western spadefoot toads are anticipated, mitigation shall consist of either: 1) preservation of suitable on- or off-site land at a minimum of a 1:1 impact-to-mitigation ratio of lost habitat acreage to compensatory habitat acreage which can support the various lifecycles of the western spadefoot; or 2) purchase of credits equivalent to the lost habitat at an appropriate mitigation bank. As this species is currently a federal candidate species which is anticipated to be listed under the ESA, the project proponent may seek a Biological Opinion for this species in anticipation of it being listed. Once the species is federally listed under the ESA, a Biological Opinion would be required for any impacts to the western spadefoot.

Significance After Mitigation: *Less-than-significant impact.* Project-level application of the above mitigation measures during construction and decommissioning of the potential VCIP energy resource and infrastructure projects would avoid or substantially reduce potential impacts to the western spadefoot toads and northwestern pond turtles to *less than significant*.

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Impact BIO-7. Impacts to Blunt-Nosed Leopard Lizard

Implementation of the VCIP Energy Resource and Infrastructure Plans could result in potentially substantial adverse impacts to the blunt-nosed leopard lizard, a federal and state listed endangered species. (*Less-than-Significant Impact with Mitigation*)

The open/natural lands west of I-5 may support potentially suitable habitat for the blunt-nosed leopard lizard if they contain rodent burrows and other burrows and dens. Individual project activities could cause harm or injury to a blunt-nosed leopard lizard, should one move onto a project site prior to ground disturbing activities. This would be considered a potentially *significant impact*. With implementation of MM BIO-7, the potential impact would be avoided or substantially reduced to *less-than-significant*.

Mitigation Measure BIO-7: Protection of the Blunt-Nose Leopard Lizard

To avoid mortality of the blunt-nosed leopard lizard due to VCIP implementation, the following mitigation measures are applicable at the project-specific level:

- a) **Species-Specific Surveys.** Species-specific surveys for blunt-nosed leopard lizard are required for projects planned within open/natural lands located west of I-5. Protocol-level surveys in suitable habitat for the blunt-nosed leopard lizard by qualified biologists shall be completed following CDFW's *Revised Approved Survey Methodology for the Blunt-nosed Leopard Lizard* (2019) or its most recent guidelines to determine the presence or absence of blunt-nosed leopard lizard prior to the start of ground disturbing activities. This protocol requires a minimum of two surveyors and includes 12 days of adult surveys between April 15 and July 15 with a maximum of four survey days per week and eight survey days within any 30-day period; at least one survey session should be conducted for four consecutive days. Additionally, five juvenile surveys are required between August 15-September 30, with at least two survey days between August 15-30 and at least two survey days between September 15-30. If the surveys detect the presence of blunt-nosed leopard lizards on the project site, then avoidance and compensation measures are required, as specified in MM BIO-7b. If the surveys fail to detect blunt-nosed leopard lizards on the project site, then no further action is required.
- b) **Avoidance and Compensation.** If a blunt-nosed leopard lizard is identified during surveys within or immediately adjacent to an area subject to ground disturbing activities, the project should be redesigned to avoid the area where blunt-nosed leopard lizards occur. If the project cannot avoid occupied habitat, the project proponent shall obtain a take permit and follow avoidance, minimization and possibly compensation measures specified in the permit. A take permit from the USFWS (likely under Section 10 of ESA) and ITP from CDFW (2081 Application under CESA) would likely be required. The project proponent would be required to develop procedures to avoid and minimize take, while compensating for lost habitat at a minimum of a 3:1 (compensation-to-impact) ratio. This compensation could occur either on- or off-site and would need to preserve lands via a conservation easement or some other legal instrument which protects and manages the land in perpetuity. The project proponent would be required to identify the area for preservation, develop a Long-Term Management Plan (LTMP) that

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maintains the conservation value of the land, and provide adequate funding based on the strategies of the LTMP.

Significance After Mitigation: Less-than-significant impact. Project-level application of the above mitigation measures to the potential VCIP energy resource and infrastructure projects would avoid or substantially reduce potential impacts to the blunt-nosed leopard lizard to *less than significant*.

Impact BIO-8. Impacts to Swainson's Hawks

Implementation of the VCIP Energy Resource and Infrastructure Plans could result in potentially substantial adverse impacts to the Swainson's hawk, a state listed threatened species. (*Less-than-Significant Impact with Mitigation*)

Nesting Habitat

Swainson's hawks typically nest in large trees in or peripheral to 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. Suitable nesting trees may occur on or near planned project sites within the Plan Area. Construction activities in the vicinity of nest trees could result in the abandonment of active Swainson's hawk nests or direct mortality to these birds. Given their protected status, project activities that adversely affect their nesting success or result in mortality of individual birds would be considered a *significant impact* under CEQA. With implementation of MM BIO-8, the potential impact to nesting Swainson's hawks would be avoided or substantially reduced to *less than significant*.

Foraging Habitat

Swainson's hawks forage throughout the Plan Area, particularly in alfalfa and row and field crops as well as fallowed/idle cropland habitats. As shown in Table 4.4-1, there is a total of approximately 329,823 acres of suitable foraging habitat for Swainson's hawks in the Plan Area under existing conditions. Full buildout of the VCIP would reduce this area by approximately 110,918 acres. The remaining 218,905 acres represent the retention of 66 percent of suitable habitat within the Plan Area after full buildout of the VCIP. The 34 percent reduction in suitable foraging habitat for Swainson's hawk within the Plan Area is not considered a significant impact since abundant and accessible foraging habitat would remain in the Plan Area and surrounding lands after VCIP buildout. Therefore, the impact of VCIP implementation 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 VCIP implementation along with development of other pending, approved, and completed projects (Cumulative 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 Appendix A of LOA's biological report, which is contained in Appendix C of this PEIR.

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LOA performed a regional analysis of foraging habitat availability and Swainson's hawk abundance using methodologies developed by Jim Estep, a wildlife biologist who has monitored Swainson's hawk populations and conducted research on Swainson's hawk for over 35 years. These methodologies are industry-standard for performing cumulative impact studies regarding Swainson's hawk, as demonstrated by their use in a numerous CEQA analyses for solar projects within Yolo, Sacramento, Fresno, and Kings Counties. As such, using this widely accepted methodology is appropriate to analyze cumulative impacts related to the Swainson's hawk associated with the proposed VCIP. The analysis included in this PEIR follows the strategies developed by Estep.

The LOA analysis first estimated the number of nest sites within the Plan Area and nearby lands within a 10-mile radius of the external Plan Area boundaries (aka Cumulative Study Area). Based on previous studies conducted in the region, LOA estimated that there are currently 131 Swainson's hawk territories within the Cumulative Study Area. LOA then mapped and categorized all the lands within the Cumulative Study Area by land use cover type, and calculated the total acreage of land use cover types that are considered suitable as foraging habitat for Swainson's hawk. The analysis determined that there are 1,081,389 acres of suitable foraging habitat in the study area prior to development of the VCIP and the cumulative projects. Based on the required foraging territory for the Swainson's hawks in the study area, it was determined that 625,394 acres of foraging habitat in the study area are required to support the 131 pairs of Swainson's hawks estimated to utilize the study area. The VCIP and cumulative projects would result in the removal of 129,896 acres of foraging habitat. Thus, the surplus habitat remaining after subtracting foraging requirements for existing Swainson's hawks and habitat lost to development was calculated to be 326,099 acres. Table 4.4-4 contains a summary of LOA's detailed habitat calculations.

TABLE 4.4-4
CUMULATIVE SWAINSON'S HAWK FORAGING HABITAT CALCULATIONS – SUMMARY

	Foraging Habitat	Acres	Percent
a	Pre-development foraging habitat in study area	1,081,389	
b	Unadjusted foraging habitat required to support 131 SWHA pairs	893,420	
c	Adjusted foraging habitat required to support 131 SWHA pairs (adjusted for 30% range overlap)	625,394	
d	Surplus SWHA foraging habitat (a-c)	455,995	-
e	Loss of foraging habitat due to VCIP implementation	110,674	-
f	Loss of foraging habitat due to other cumulative development in study area	19,222	-
g	Cumulative loss of foraging habitat from VCIP and non-VCIP cumulative development (e+f)	129,896	
h	Remaining available foraging habitat following VCIP and non-VCIP cumulative development (a-g)	951,493	88.0
i	Remaining available surplus SWHA foraging habitat following all VCIP and cumulative development (d-g)	326,099	71.5%

Source: Live Oak Associates 2025

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To determine if the cumulative loss of foraging habitat represented a significant cumulative impact, LOA followed the commonly used methodologies developed by Jim Estep (Estep 2011), a wildlife biologist who has monitored Swainson's hawk populations and conducted research on the Swainson's hawk for over 35 years. Estep considers a loss of 30 percent or more of surplus foraging habitat "significant" under CEQA because, based upon his extensive research, this level of loss could reduce the distribution and abundance of an existing Swainson's hawk population and/or prevent that population from expanding. Finding Estep's significance threshold applicable and supported by substantial evidence, LOA applied the threshold where a reduction of surplus habitat to *less than 70 percent* relative to pre-project conditions would represent a cumulatively significant impact.

As shown in Table 4.4-4, it was calculated that the cumulative projects would reduce the total surplus foraging habitat in the study area to 326,099 acres. This remaining acreage of surplus foraging area represents 71.5 percent of the pre-project total of 455,995 acres of surplus foraging habitat. 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*.

It is also worth noting that: 1) Swainson's hawks have been observed foraging within solar facilities, indicating that these facilities provide some foraging value and that these lands are therefore not completely removed from available foraging habitat in practice; and 2) upon decommissioning of the VCIP facilities, much of the land repurposed for clean energy production under VCIP over the short-term will be restored to a condition suitable for agriculture, thus increasing the acreage of available foraging habitat. Therefore, the estimate of 71.5 percent of surplus foraging habitat that would remain under cumulative development conditions is considered a conservative (low) estimate for both short-term and long-term conditions.

Mitigation Measure BIO-8: Protection of Swainson's Hawks

To reduce the potential impacts to Swainson's hawks due to VCIP implementation, the following mitigation measures are applicable at the project-specific level:

- a. **Pre-construction Surveys for Swainson's Hawk.** During the nesting season prior to the construction on the project site within a half mile of a potential nest tree, preconstruction surveys shall be conducted within the construction zones and adjacent lands to identify any nesting pairs of Swainson's hawks. These surveys shall conform to the guidelines 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 and any updates to these guidelines. Pre-construction surveys are not required for construction zones located farther than a half mile from a potential nest tree.
- b. **Nest Avoidance Measures.** If an active nest is found within one-half mile of a planned construction zone, a qualified biologist shall establish a suitable construction-free buffer around the nest. The biologist shall establish the buffer based on topography, nature of construction work, distance to the nest tree, and individual behavior of the nesting pair and young, if they are present. This buffer shall be identified on the ground with flagging or fencing and shall be maintained until the biologist has determined the young have fledged.

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If it is necessary to undertake construction work within the established buffer, a qualified biologist familiar with the active nest should establish a record of “regular” behavior of the nesting pair, and then establish an exclusion zone based on the tolerance of the nesting pair to construction activity in the vicinity of the nest. The qualified biologist shall conduct monitoring of the nest whenever work is planned to occur within the buffer. If a change in behavior from the previously observed “regular” behavior occurs, the qualified biologist shall increase the size of the exclusion zone or reestablish the original standard buffer.

- c. **Mitigation for Loss of Breeding Habitat.** If it is determined that a Swainson’s hawk nest tree(s) is located on or near the individual project site (within 0.5 mile) and was used by a nesting pair within the previous 5 years, the qualified biologist shall coordinate with the project proponent to determine whether the nest tree(s) is planned to be directly impacted (removed) or if the nest tree is planned to be preserved such that potential impacts to the nesting Swainson’s hawks would only occur during nesting season.

If the nest tree(s) is not planned to be permanently impacted, the project shall include establishment of a permanent buffer zone(s) of adequate size around nest tree location(s). The buffer zone shall require adequate management for the life of the project to ensure the buffer area remains suitable for Swainson’s hawks. Annual monitoring of the suitability of management activities may be required by CDFW.

If the project will impact a nest tree, avoidance and minimization measures shall be implemented during the nesting season, as specified in MM BIO-3b and MM BIO-3c above, and an off-site conservation easement shall be required as described below. If removal of a nest tree is planned to occur within the nesting season prior to active nesting, a temporary nest structure shall be established within 0.5 mile of the tree to be removed and shall remain in place throughout the nesting season.

The potential impact to nest trees shall be compensated for through a conservation easement or through purchase of credits at a conservation bank for Swainson’s hawk breeding habitat (nest trees and associated foraging habitat). The conservation easement shall be established at a 1:1 ratio for foraging/breeding habitat preservation. The easement shall include habitats determined to be suitable for foraging and/or breeding year-round and seasonal use. The easement must include a tree of suitable nesting type and size as well as additional plantings for new potential nest trees.

- d. **Tailgate Training for Workers.** Construction workers on all VCIP projects shall attend a tailgate training session conducted by a qualified biologist. The training shall include a description of the species, a brief summary of its biology and minimization measures and instructions on what to do if a Swainson’s hawk is observed on or near the construction site.

Significance After Mitigation: Less-than-significant impact. Project-level application of the above mitigation measures to the potential VCIP energy resource and infrastructure projects would avoid or substantially reduce potential impacts to Swainson’s hawk nesting to *less than significant*.

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Impact BIO-9. Impacts to Burrowing Owls

Implementation of the VCIP Energy Resource and Infrastructure Plans could result in the loss of foraging and breeding habitat for burrowing owls, a candidate species for state listing as threatened or endangered. (*Less-than-Significant Impacts with Mitigation*)

Suitable habitats for the burrowing owl include fallow/idle cropland, open/natural lands, along banks of any canals, irrigation ditches, or streams, and margins of farm access roads. Nesting habitat consists mainly of small mammal burrows and culverts and associated nearby foraging habitats within the above habitat types. The development of VCIP projects could result in the loss of foraging and breeding habitat for burrowing owls. As shown in Table 4.4-1, there is a total of approximately 293,520 acres of suitable foraging habitat for burrowing owls in the Plan Area under existing conditions. Full buildout of the VCIP would reduce this area by approximately 97,947 acres. The remaining 195,573 acres represent the retention of 67 percent of suitable habitat within the Plan Area after full buildout of the VCIP. The highest quality habitat for burrowing owls in the Plan Area, open/natural lands and canals (within the waters/wetlands habitat type), are planned to be avoided or have limited impacts, as these are the two smallest habitat types within the Plan Area. For any burrowing owls occurring elsewhere within the Plan Area, both breeding and foraging habitat could be lost; however, there is abundant suitable breeding and foraging habitat on agricultural lands to the west of the Plan Area and the entire Plan Area will not be developed, and thus lands would be retained which are not planned for solar or other development in the foreseeable future. Therefore, the impacts from VCIP implementation on burrowing owl habitat would be *less than significant* on a Plan-wide basis. However, in the case of some VCIP projects, it is possible that sufficient foraging habitat on adjacent or nearby lands would not be available either because they do not contain suitable habitat, or because they are already developed. Since the habitat requirements for a burrowing owl pair are 200 acres of suitable foraging habitat within two miles of the nest site, it is possible that situations may arise where this habitat requirement cannot be met. In such cases, the loss of habitat would represent a *significant impact*. With implementation of MM BIO-9, the potential impact would be avoided or substantially reduced to *less than significant*.

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. Thus, the mortality of individual burrowing owls would constitute a *significant impact*. With implementation of MM BIO-9, the potential impact would be avoided or substantially reduced to *less than significant*.

Mitigation Measure BIO-9: Protection of Burrowing Owls

To avoid or substantially reduce the potential impact to burrowing owls due to VCIP implementation, the following mitigation measures are applicable at the project-specific level:

- 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 the project site. These surveys shall be conducted according to methods described in the *Staff Report on Burrowing Owl Mitigation* (CDFG 2012) or the most recent CDFW guidelines. The surveys shall cover all areas of suitable burrowing owl habitat within the project site.

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- 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 buffer zones shall be enclosed with temporary fencing, and construction equipment and workers shall not be allowed to enter the enclosed setback areas. The buffer zones shall remain in place for the duration of the breeding season.
- 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 150-250 feet around each burrow, with the required buffer distance to be determined in each case by a qualified biologist. Passive relocation of resident owls is not recommended by CDFW where it can be avoided. Given recent change in the burrowing owl's status to a state candidate species for listing, an ITP would likely be required to conduct passive relocation.
- d) **Mitigation for Loss of Burrowing Owl Habitat.** If it is determined that burrowing owl nest(s) are located on or near the individual project site, the qualified biologist shall coordinate with the project proponent to determine whether these nest(s) are to be impacted or if they are planned to be avoided. If the on-site or nearby nests are to remain in place, the biologist shall determine whether sufficient foraging habitat will be available on adjacent or nearby lands after project completion, 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 insufficient nearby foraging habitat would be available after project completion, the biologist shall determine the amount of off-site (or on-site) foraging habitat that would be required to sustain the burrowing owl pair. The potential impact to foraging habitat shall be either avoided through implementation of measure #1 below (onsite buffer zone), or compensated through implementation of measure #2 (conservation easement), or measure #3 (long-term agreement on adjacent lands), as set forth below:
- 1) Establishment on the project site of a permanent buffer zone(s) of adequate size around current burrowing owl locations, such that the total acreage of onsite (potentially combined with adjacent offsite) habitat is sufficient to support the resident burrowing owls. These buffer zones shall require adequate management for the life of the project to ensure the buffer area remains suitable for burrowing owls. Annual monitoring of management activities may be required by CDFW; or
 - 2) Establishment of an off-site conservation easement for foraging/breeding habitat preservation, with the lands covered by the easement containing sufficient acreage to support the impacted burrowing owls. The easement shall include habitats determined to be suitable for foraging and/or breeding year-round and seasonal use; or
 - 3) Short or long-term compensation for foraging habitat by providing farmers on adjacent lands incentives to plant particular crops known to be suitable foraging habitat for

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burrowing owls (i.e., winter wheat, alfalfa, etc.) and to enact a farmer burrowing owl safety program where farmers are trained in how to reduce burrowing owl mortalities on their lands and farm roads.

- e) **Tailgate Training for Workers.** Construction workers on all VCIP projects shall attend a tailgate training session conducted by a qualified biologist. The training shall include a description of the species, a brief summary of its biology and minimization measures and instructions on what to do if a burrowing owl is observed on or near the construction site.

Significance After Mitigation: **Less-than-significant impact.** Project-level application of the above mitigation measures to the potential VCIP energy resource and infrastructure projects would avoid or substantially reduce potential impacts to burrowing owls to *less than significant*.

Impact BIO-10. Impacts to Pallid Bat, Western Mastiff Bat, and other Bat Species

Implementation of the VCIP Energy Resource and Infrastructure Plans could result in potentially substantial adverse impacts to the pallid bat and western mastiff bat, both state species of special concern, and other bat species. (*Less-than-Significant Impact with Mitigation*)

These and other bat species may forage over the Plan Area, and roosting habitat may occur on individual project sites in the form of trees or buildings/structures. Loss of roosting or foraging habitat for bats is not considered significant since such habitat is abundantly available regionally. Activities that may result in harm or mortality to roosting bats or a maternity colony would constitute a potentially *significant impact*. With implementation of MM BIO-10, the potential impact would be avoided or substantially reduced to *less-than-significant*.

Mitigation Measure BIO-10: Protection of Bat Species

To avoid harm or mortality to bats due to VCIP implementation, the following mitigation measures are applicable at the project-specific level:

- a) **Initial Surveys.** The initial biological surveys required for the project under project MM BIO-1 shall identify if trees or buildings are on the project site. If no trees or buildings are present on the site, no further surveys or mitigation for bats is required. If trees or buildings are present on the project site, the following measures would apply.
- b) **Daytime Habitat Assessment/Humane Eviction.** A daytime bat assessment/survey shall be conducted prior to removal of any intact trees or buildings on the project site. If a non-breeding bat colony is observed, the individuals shall be humanely evicted via two-step removal process under the direction of a qualified biologist to ensure that no harm or “take” would occur to any bats as a result of building or intact tree removal activities.
- c) **Minimization.** If a maternity colony is detected, then a construction-free buffer zone shall be established around the applicable building or tree and remain in place until the nursery is no

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longer active. Removal of the building or tree should be conducted between March 1 and April 15 or between August 15 and October 15 to avoid interfering with an active nursery.

Significance After Mitigation: **Less-than-significant impact.** Project-level application of the above mitigation measures to the potential VCIP energy resource and infrastructure projects would avoid or substantially reduce potential impacts to bats to *less than significant*.

Impact BIO-11. Impacts to Burrowing Mammals Including the San Joaquin Antelope Squirrel (SJAS), Short-Nosed Kangaroo Rat, and Giant Kangaroo Rat

Implementation of the VCIP Energy Resource and Infrastructure Plans could result in potentially substantial adverse impacts to protected burrowing mammal species. (*Less-than-Significant Impact with Mitigation*)

The SJAS could occur in open/natural lands within the Plan Area, while the short-nosed kangaroo rat and giant kangaroo rat would only occur in this habitat in the areas of the Plan Area located west of I-5. If these species occur on a VCIP project site, construction activities could cause harm or mortality to these species. This would be considered a potentially *significant impact*. With implementation of MM BIO-11, the potential impact would be avoided or substantially reduced to *less than significant*.

Mitigation Measure BIO-11: Protection of Protected Burrowing Mammal Species

To avoid harm or mortality to protected burrowing mammal species due to VCIP implementation, the following mitigation measures are applicable at the project-specific level:

- a) **Preliminary Surveys/Actions.** Preliminary daytime surveys shall be conducted to identify SJAS during their active season (April 1-September 30) in daylight hours between 20 and 30 degrees Celsius (68-86 degrees Fahrenheit). During these surveys, if kangaroo rat burrows are identified, live trapping by a qualified biologist may be required to ascertain presence or absence of the giant and short-nosed kangaroo rats, since both species can occupy kangaroo rat burrows. If preliminary surveys identify the project as supporting potentially suitable habitat for any of these species, the qualified biologist shall identify avoidable burrows within a particular work area. Any avoidable burrows shall be avoided as discussed below. Should preliminary surveys identify that there are unavoidable burrows within a particular work area, protocol-level surveys for the SJAS, giant kangaroo rat, and short-nosed kangaroo rat shall be conducted before starting construction activities in that work area.
- b) **Pre-construction Surveys.** During the preconstruction surveys for other species, if burrows are identified that were not previously identified during the preliminary surveys, a qualified biologist shall flag burrows within the project site and any off-highway access driveways for the project, and any other work areas within the open/natural lands. If preliminary surveys and pre-construction surveys fail to detect burrows, then no further action is required.

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- c) **Avoidance and Compensation.** If burrows are identified during preconstruction surveys within or immediately adjacent to an area subject to project activity, a disturbance-free buffer zone of at least 10 meters shall be established for each burrow. If active burrows cannot be avoided, it may be necessary to obtain an ITP, under which suitable habitat may be required to be preserved either on- or off-site.

Significance After Mitigation: **Less-than-significant impact.** Project-level application of the above mitigation measures to the potential VCIP energy resource and infrastructure projects would avoid or substantially reduce potential impacts to protected burrowing mammal species to *less than significant*.

Impact BIO-12. Impacts to San Joaquin Kit Fox

Implementation of the VCIP Energy Resource and Infrastructure Plans could result in potentially substantial adverse impacts to the San Joaquin kit fox (SJKF), a federally listed endangered species. (*Less-than-Significant Impact with Mitigation*)

Open/natural lands constitute the core habitat for the SJKF, although they may also occur in fallow/idle cropland, and may periodically move through the Plan Area. As such, the entire Plan Area has potential for occurrence of SJKF. The majority of the Plan Area has been highly modified for and due to agricultural use, while lands adjacent to the west of the Plan Area have retained their natural habitat quality. Therefore, SJKFs may occur within the open/natural lands and fallow/idle croplands and may occasionally forage within or disperse through the rest of the Plan Area. As such, VCIP implementation could have a potentially *significant impact* upon the SJKF. With implementation of MM BIO-12, the potential impact would be avoided or substantially reduced to *less than significant*.

Mitigation Measure BIO-12: Protection of San Joaquin Kit Fox

To avoid harm or mortality to San Joaquin kit fox due to VCIP implementation, the following mitigation measures are applicable at the project-specific level:

- a) **Pre-Construction Surveys for Kit Fox.** Pre-construction surveys for the SJKF 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 SJKF. These surveys shall be conducted in accordance with the “*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 4.4-4 or the most recent USFWS guidelines. The primary objective of these recommendations is to identify kit fox habitat features (e.g., potential dens and refugia) on the project site 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.

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- b) **Kit Fox Avoidance Measures.** Should kit fox be found to be using the project site during pre-construction 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 Workers.** All workers on the project shall attend a tailgate training session conducted by a qualified biologist. The training shall include a description of the species, a brief summary of their biology, and minimization measures and instructions on what to do if a SJKF is observed on the 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 USFWS's standard recommendations provided above and set forth in full in Table 4.4-4.
- e) **Mortality Reporting.** The Sacramento Field Office of the USFWS and the Fresno Field Office of CDFW shall be notified in writing within three working days in case of the accidental death or injury to a SJKF during project-related activities. Notification must include the date, time, location of the incident or of the finding of a dead or injured animal, and any other pertinent information.
- f) **Minimization.** If active dens are identified during pre-activity surveys within or immediately adjacent to an area subject to project activity, a disturbance-free buffer zone of at least 300 feet shall be established around the active den. This buffer shall be maintained until the young have moved on from the den. Once the den has been confirmed to be inactive by a qualified biologist, it shall be excavated, then collapsed. If active burrows cannot be avoided, an ITP may be required.
- g) **Wildlife-friendly Fencing.** The perimeter fencing surrounding each phase of the project shall consist of wildlife-friendly or permeable fencing that allows SJKF and other wildlife to move through the site unimpeded. The bottom of the perimeter fencing shall be 5 to 7 inches above the ground, as measured from the top of the ground to the lowest point of the fence. The bottom of the fence edges shall be knuckled (wrapped back to form a smooth edge) to allow wildlife to pass through safely. The fencing shall not be electrified.

Significance After Mitigation: **Less-than-significant impact.** Project-level application of the above mitigation measures to the potential VCIP energy resource and infrastructure projects would avoid or substantially reduce potential impacts to San Joaquin kit fox to *less than significant*.

[Should kit fox be observed within an individual project site, the applicant may wish to contact the USFWS for implementation of a Safe Harbor Agreement. If allowed, this agreement will allow the applicant "assurances that additional land use restrictions as a result of their voluntary conservation actions would not be imposed by the USFWS" (USFWS 1998).]

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Table 4.4-4

**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.)

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Table 4.4-4 (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

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Impact BIO-13. Impacts to American Badgers

Implementation of the VCIP Energy Resource and Infrastructure Plans could result in potentially adverse impacts to the American badger, a California Species of Special Concern. (*Less-than-Significant Impact with Mitigation*)

The American badger has been previously recorded within the Plan Area and may occur in open/natural lands and fallow/idle croplands, and may periodically move through the Plan Area. As such, implementation of proposed VCIP projects could have a potentially *significant impact* upon the American badger. Implementation of MM BIO-13 would avoid or substantially reduce this potential impact to *less than significant*.

Mitigation Measure BIO-13. Protection of American Badger

To avoid harm or mortality to American badger due to VCIP implementation, the following mitigation measures are applicable at the project-specific level:

- a. **Pre-construction 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 project proponent so stating and no other mitigations for the protection of badgers would be required.
- 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 shall be established around the den. Once the qualified biologist has determined that badgers have vacated the burrow, the burrow shall 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 to be present onsite until it is determined that young are of an independent age and construction or decommissioning activities would not harm individual badgers. Once the den has been confirmed to be inactive by the qualified biologist, it may be excavated, then collapsed.
- c. **Tailgate Training for Workers.** Construction workers on all VCIP projects shall attend a tailgate training session conducted by a qualified biologist. The training shall 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 the project site.

Significance After Mitigation: *Less-than-significant impact.* Project-level application of the above mitigation measures to the potential VCIP energy resource and infrastructure projects would avoid or substantially reduce potential impacts to American badger to *less than significant*.

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Impact BIO-14. Impacts to Wildlife Movement Corridors

Implementation of the VCIP Energy Resource and Infrastructure Plans would not interfere with the home range and dispersal movements of native wildlife. (*Less-than-Significant Impact*)

As discussed in Section 4.4.1. *Environmental Setting*, there are several wildlife movement corridors within and adjacent to the Plan Area. The northern third of the Plan Area serves some function as a wildlife linkage/corridor, which potentially includes a narrower southwest-northeast wildlife linkage/corridor area across the Plan Area from the region of Three Rocks to just south of the Mendota Wildlife Refuge. In addition, the natural hills on the west side of I-5 act as a wildlife linkage/corridor. Other wildlife corridors adjacent to the Plan Area include the riparian corridor along the San Joaquin and Kings Rivers and the Delta-Mendota Canal and Fresno Slough. The San Luis Canal/California Aqueduct, which bisects the Plan Area, also provides a corridor for wildlife movement.

Since approximately 25 percent of the Plan Area would be developed under full VCIP buildout, and since much of the planned development would occur in non-contiguous DFAs, the Plan Area would retain open lands which would be utilized for wildlife movement. The VCIP projects would retain the existing canals and ditches which pass through the solar and energy storage sites, and which would not be enclosed within the facilities' perimeter fencing, and would therefore allow open access through the area for wildlife movement. 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 buildout without substantial interference. Also, the VCIP projects would include wildlife-friendly fencing which would include a 5-7 inch continuous gap at the bottom of the fencing to permit passage of wildlife through the facilities, as specified in MM BIO-12g.

In summary, wildlife currently using the Plan Area for movement are expected to continue to use the Plan Area after VCIP buildout. Therefore, the implementation of VCIP energy and infrastructure plans would not interfere with the home range and dispersal movements of native wildlife, and the impact would be *less than significant*.

Mitigation Measures: No mitigation is required.

Impact BIO-15. Potential Hazards to Avian Species

Implementation of the VCIP Energy Resource and Infrastructure Plans would minimize potential hazards to avian species due to night lighting, lake effect, collision, and electrocution. (*Less-than-Significant Impact with Mitigation*)

Night Lighting

The avian species that occur within the Plan Area or migrate through it would be subject to potential increases in night lighting from the VCIP solar, energy storage, and substation facilities. Night lighting, particularly upward-facing lights can attract night-migrating birds and move them off their migratory {AM0010.1}

track. Minimal night lighting is expected to be employed for individual projects within the Plan Area. As described in Section 4.1. *Aesthetics*, lighting for the typical solar and energy storage facility would be designed to provide minimum illumination for safety and security. Light fixtures would be hooded and downward directed. Low-level lighting would be installed at the entry gates, substation, and O&M building, and there would be no lighting along any internal access driveways, or around the facility perimeter. Lighting systems would be light activated to automatically come on in the evening and shut off in the morning. There would be no lighting within the solar fields except at the power conversion system inverter/transformer pads (PCSs), which would be activated only when needed by switch or motion sensors. Since each individual VCIP project would include minimal and low-intensity lighting, the impact of project lighting to avian species would be *less than significant*.

Lake Effect

The “lake effect” is a phenomenon where migrating waterfowl are attracted to solar photovoltaic (PV) facilities because the solar arrays can be mistaken for water surfaces, causing the birds to collide with the structures as they attempt to land on the panels. As discussed in detail in LOA’s biological report in Appendix C, birds that are water-associated species like shorebirds and geese have the ability to fly off land or water, while water-obligated birds such as ducks, grebes, and loons need water to take off for flight and are unable to take off from land. Migrating water-obligated species require water bodies at regular intervals along their migration routes. Upland avian species also need daily water and can be attracted by the lake effect. This could result in collisions with solar arrays, or for water-obligated species could result in stranding since they need water to take flight.

Studies suggest that birds are attracted to structures with higher polarization, or reflectivity (Diehl et al. 2021; Kosciuch et al. 2020). Thus, the attraction would be greater at concentrating solar facilities, which utilize highly reflective mirrors to focus reflected sunlight to a central receiving tower, compared to solar PV arrays, where the panels are manufactured and treated specifically to produce low reflectivity.

As part of the Pacific Flyway, the San Joaquin Valley has significant aquatic and wildlife habitat areas that support millions of birds across the seasons. Migratory waterfowl move through the San Joaquin Valley from the Delta to San Francisco Bay, the Grasslands region, Mendota Wildlife Area, Tulare Lakebed, and Kern National Wildlife Refuge. Large bodies of surface water in the region include the San Luis Reservoir, Los Banos Reservoir, and O’Neill Forebay. Apart from the San Joaquin River and the marsh and slough complex in the Mendota Wildlife Area to the northeast, there are no large waterbodies near the Plan Area, although studies have shown that waterfowl use lands within the Plan Area for foraging.

Given the abundance of aquatic habitat available in the Plan Area vicinity to support migrating and resident avian species, and the low level of attraction to the non-reflective solar arrays planned under the VCIP, the potential for adverse effects due to potential “lake effect” from VCIP solar PV facilities would be small.

During solar facility operation, solar panels are typically positioned at night where they last tracked the sun, or are pre-positioned to the east to capture sunrise (i.e., the panels would be in a near vertical position overnight). However, if left in a horizontal or flat position, solar panels may attract birds attempting to land on a PV array at sunset or sunrise that mistake it for water. Bird collisions with solar facilities would be a *potentially significant impact*, but this impact would be reduced to *less than* {AM0010.1}

significant by implementing MM BIO-14a, which would require panels to be set at a near vertical position at the end of each day. Therefore, during morning and late afternoon/evening hours when waterfowl are most likely to land in large bodies of water, the panels would be in a position which would avoid producing the potential for “lake effect” during those critical hours. This would reduce the potential for the arrays to be mistaken for water surfaces and thus reduce the potential for attempted landings and collisions with the arrays, and thus would minimize the potential for harm to birds.

Collision and Electrocuting Hazards at Transmission Lines

All bird species, especially raptors and other large birds, are susceptible to collisions with power lines, particularly when the lines have low visibility. The VCIP gen-ties and transmission lines would introduce new collision hazards resulting in potential injury or mortality to raptors and other large bird species.

Electrocution can occur when phase conductors and other electrical hardware are separated by less than the wingspan or height of the bird. The risk of injury or mortality from electrocution would be a *potentially significant impact*.

The risk of collision and electrocution would be reduced to *less than significant* by implementing MM BIO-15b, which would require transmission lines and electrical components to be designed, installed, in accordance with the guidance of the Avian Power Line Interaction Committee (APLIC).

Mitigation Measure BIO-14. Protection of Avian Species from Risk of Collision and Electrocuting

To avoid harm or mortality to avian species due to risk of collision with solar arrays, and risk of collision and electrocution at transmission lines, the following mitigation measures are applicable at the project-specific level:

- a. **Reduce Potential for Bird Collisions with Solar Arrays.** At the end of each day, the solar panels shall be set at a near vertical position to avoid a horizontal resting position which may attract birds which could mistake the arrays for water surfaces.
- b. **Reduce Potential for Bird Collisions and Electrocutings with Power Lines.** To minimize the potential for bird collisions and electrocutings with power lines, the VCIP gen-tie and transmission lines shall be designed, constructed, and maintained in accordance with the following APLIC guidelines: *Reducing Avian Collisions with Power Lines: The State of the Art in 2012* (APLIC 2012) and *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006* (APLIC 2006).

Significance After Mitigation: *Less-than-significant impact.* Project-level application of the above mitigation measures to the potential VCIP energy resource and infrastructure projects would avoid or substantially reduce potential collision and electrocution hazard impacts to avian species to *less than significant*.

Impact BIO-16. Impacts to Jurisdictional Waters and Riparian Habitats

Implementation of the VCIP Energy Resource and Infrastructure Plans could result in potentially adverse impacts to jurisdictional waters and riparian habitats. (*Less-than-Significant Impact with Mitigation*)

Hydrologic features within the Plan Area include the San Luis Canal/California Aqueduct, Coalinga Canal, canals, and some ephemeral drainages which are expected to be dry nearly the entire year. The Plan Area also likely supports a few vernal pools and seasonal wetlands along its eastern boundary. The San Luis Canal/California Aqueduct are considered unlikely to be jurisdictional by the USACE.

Ephemeral drainages are not likely to meet the criteria to be jurisdictional by the USACE. However, specifics and contexts are important and whether USACE, RWQCB, or CDFW any of would exercise jurisdiction over such a feature can only be ascertained by conferring with each agency.

Vernal pools and seasonal wetlands on the other hand, while likely meeting the wetlands criteria of USACE, would only be considered jurisdictional if they have a continuous surface connection with a body of water that is itself a “water of the United States”. The RWQCB would likely consider these features as water of the state. CDFW does not have jurisdiction over isolated vernal pools or seasonal wetlands unless a protected species is present.

None of the hydrologic features within the Plan Area are expected to be impacted by the potential VCIP projects particularly since there are few hydrologic features in the Plan Area and each project would have sufficient acreage for design flexibility to avoid such features. Therefore, impacts associated with most, if not all, VCIP projects would be less than significant. Suitable permits may be required if a VCIP project would involve impacts to hydrologic regulated by the USACE, RWQCB and/or CDFW; the affected projects would be subject to mitigation conditions as stipulated in any relevant permit. With implementation of MM BIO-15, the potential impact would be avoided or substantially reduced to *less than significant*.

Mitigation Measure BIO-15: Jurisdictional Waters and Riparian Habitats

If a proposed VCIP project includes plans to place fill or structures within a wetland, jurisdictional water, or riparian habitat, the following mitigation measures are applicable at the project-specific level to ensure consistency with applicable “no net loss” policies:

- a. **Minimization of Impact.** If a proposed VCIP project includes plans to fill a Water of the U.S., and/or a Water of the State, the project shall be designed to minimize impacts to such Waters to the maximum extent practicable.
- b. **Compensatory Mitigation.** If avoidance is not practicable, compensation for the loss of Waters of the U.S. and/or Waters of the State may be required unless a waiver is granted. This may be accomplished by purchasing in-kind credits at an approved mitigation bank, payment into an established in-lieu fund, or through the preservation of onsite or offsite lands with similar hydrologic features. Any preservation lands would be placed under conservation

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easement held by a third party and managed in perpetuity with an agency approved endowment fund.

- c. **Creation of New Wetlands.** As an alternative to Mitigation Measure BIO-16b, a project proponent may compensate for the loss of Waters of the U.S. and/or State through the creation of in-kind waters at a ratio determined by the USACE and/or RWQCB on preserved lands, onsite or offsite, which have characteristics necessary for creation of similar hydrologic features. Such created wetland would be placed under conservation easement held by a third party and managed in perpetuity with an agency approved endowment fund.
- d. **Employee Education Program.** During the construction phases of the project, a qualified biologist shall conduct an environmental awareness program for all construction and onsite personnel. Training shall include a discussion of avoidance and minimization measures being implemented to protect biological resources (including jurisdictional Waters and wetlands) as well as terms and conditions of the permits.

Significance After Mitigation: **Less-than-significant impact.** Project-level application of the above mitigation measures to the potential VCIP energy resource and infrastructure projects would avoid or substantially reduce potential impacts to jurisdictional waters and riparian habitats to *less than significant*.

Impact BIO-17. Local Policies or Ordinances Protecting Biological Resources

Implementation of the VCIP Energy Resource and Infrastructure Plans would not conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. (*Less-than-Significant Impact*)

Since the Plan Area is within Fresno County, the VCIP energy and infrastructure development may be subject to the policies and regulations of Fresno County. The Fresno County General Plan includes a number of policies related to the protection of biological species and habitats, as enumerated in Section 4.4.2. *Regulatory Context*. These include policies for the protection of sensitive species and habitats during project development by requiring biological surveys for discretionary projects, and implementing mitigation for potential biological impacts. Open Space and Conservation Policy OS-F.4 Landmark Trees specifically provides for the preservation and protection of landmark trees whenever possible.

The biological resources impacts associated with VCIP implementation are identified previously in this section. The mitigation measures identified for potential impacts provide detailed prescriptive actions to be undertaken at the project-specific stage to avoid or substantially reduce potentially significant impacts to biological resources to less-than-significant levels. It is expected that potential VCIP energy and infrastructure development would take place in a manner that would not conflict with local policies or ordinances protecting biological resources. As such, the impact of VCIP implementation with regard to conflicts with local policies and ordinances protecting biological resources would be *less than significant*.

Mitigation Measures: No mitigation is required.

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Impact BIO-18. Habitat Conservation Plans

Implementation of the VCIP Energy Resource and Infrastructure Plan would not conflict with adopted habitat conservation plans or other approved local, regional or state habitat conservation plans. (*Less-than-Significant Impact*)

USFWS adopted the *Recovery Plan for Upland Species of the San Joaquin Valley* (USFWS 1998) 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 western edge of the Plan Area is adjacent to the Ciervo-Panoche Natural Area, which the Recovery Plan defines as “natural lands along the western edge of the Valley and in the contiguous foothills and coastal range, from the Panoche Hills and Valley, Fresno and San Benito Counties, south to Anticline Ridge near Coalinga, Fresno County.” The Ciervo-Panoche Natural Area encompasses an area of approximately one-half million acres in the Coast Ranges immediately west of the Plan Area. Within this Natural Area, the goals of the Recovery Plan are to protect the natural lands to facilitate the recovery of specific species and to maintain and enhance existing movement corridors as well as connecting other natural lands within the Recovery area.

The Ciervo-Panoche Natural Area is included in the recovery plans for three plant species (California jewelflower, San Joaquin woollythreads, and Hoover’s eriastrium) and two animal species (giant kangaroo rat and blunt-nosed leopard lizard). Suitable habitat for all these species consists of open/natural lands, while cultivated agricultural land is unsuitable habitat for these species. Almost all the Plan Area lands west of I-5 consist of lands in cultivation for row or tree crops, with a few pockets of natural/open lands or fallowed lands. Among the DFAs located west of I-5, there are a total of approximately 500 acres in open/natural or fallowed lands. Before these lands can be developed for solar and energy storage facilities, pre-construction surveys for these species would be required, as set forth in MM BIO-1, BIO-2, BIO-7 and BIO-11 above, which would confirm presence or absence of these species and require mitigation as appropriate in each case. As such, impacts to individuals of these species would be avoided or mitigated to less than significant levels. The loss of up to 500 dispersed acres of potential habitat at the extreme eastern edge of the Ciervo-Panoche Natural Area would not impair or impede the recovery of the five species sought to be protected, and the impact would be *less than significant*.

Another species addressed in the Recovery Plan that potentially occurs within or in the vicinity of the Plan Area is the SJKF. While the Recovery Plan covers the kit fox, it does not include a specific recovery plan for this species as it does for the five species mentioned above and others. However, any potential impacts to kit fox would be avoided through implementation of MM BIO-12 above. Therefore, the implementation of the VCIP would not conflict with the goals of the Recovery Plan for protecting the SJKF and the impact would be *less than significant*.

The Recovery Plan also identifies potential wildlife movement corridors and indicates that the northern portion of the Plan Area contains areas mapped as “[p]roposed areas where connectivity and linkages

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should be promoted,” and the natural hills west of I-5 are likely used by native wildlife as a corridor along the foothills. In this context, it is noted that the solar and energy storage projects planned under the VCIP would include wildlife-friendly fencing which would include a 5- to 7-inch continuous gap at the bottom of the fencing to permit passage of wildlife through the facilities. In addition, the ditches and canals that pass through the solar and energy storage sites would not be enclosed within the facilities’ perimeter fencing, and would therefore allow open access through the area for wildlife movement. As such, the VCIP projects would not impede wildlife movement, including the movement of SJKF through the Plan Area, and the impact would be *less than significant*.

In summary, the projects planned under the proposed VCIP would not conflict with the provisions of the Recovery Plan, and the impact to the Recovery Plan would be *less than significant*.

The Plan Area is not covered by any existing HCP or NCCP, or any other conservation plan area adopted at the local, regional, state, or federal level. Therefore, the implementation of the VCIP Energy Resource and Infrastructure Plans would not conflict with any such plans.

The Plan Area is not included in any Critical Habitat Area designated by the USFWS or CDFW (CDFW 2024).

Mitigation Measures: Implement MM BIO-1, BIO-2, BIO-7, BIO-11, and BIO-12.

4.4.3.2. TRANSMISSION CORRIDORS OUTSIDE THE VCIP

The transmission corridors for delivery of solar generation from potential VCIP projects to urban electricity markets in northern and southern California have been identified at a conceptual level in this PEIR to allow a general discussion of environmental impacts associated with transmission line development for informational purposes. These transmission delivery corridors extend far beyond the District’s boundaries and are not part of the proposed VCIP. Planning and approval of these outside transmission lines are under the jurisdiction of the state and federal energy regulatory agencies, public utilities, and cities and counties traversed by the transmission lines. The following discussion provides an overview of potential impacts of the outside transmission lines upon biological resources.

The three main delivery transmission lines would traverse 10 counties en route to the regional load centers in northern, central, and southern California. The transmission lines would pass through diverse biological settings comprising seven ecoregions. The northern transmission corridor extends along the western edge of the San Joaquin Valley from Fresno to Alameda counties and would run through the Great Valley and Coast Ranges ecoregions (CDFW 2024c). The land cover along the northern transmission route consists primarily of agricultural land on the valley floor, and in the foothill segments it consists entirely of annual grasslands which transitions to blue oak woodlands on the higher terrain to the west (USFS 2017). Ephemeral streams, seasonal wetlands, vernal pools, and riparian habitats also occur along the corridor. A number of protected plant and animal species have been observed and recorded in the vicinity of the northern corridor. Examples include valley longhorn elderberry beetle, blunt-nosed leopard lizard, burrowing owl, Swainson’s hawk, and critical habitat for red-legged frog near Tracy (CDFW 2024c). Some species found in the northern corridor are not present within the Plan Area and are therefore not analyzed above (e.g., the red-legged frog).

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The western transmission corridor would extend westward over the Coast Ranges through San Benito and Monterey counties to Moss Landing on Monterey Bay. The mountains and interior valleys traversed by this corridor are part of the Central Valley Coast Ranges and Central California Coast ecoregions and are vegetated by a mixture of oak woodland, scrub, and chaparral. Ephemeral streams, seasonal wetlands, vernal pools, and riparian habitats also occur along the corridor. A number of protected plant and animal species occur in the vicinity of the western corridor. Examples include blunt-nosed leopard lizard, SJKF and numerous resident and migratory bird species. The transmission route traverses critical habitat for the Monterey spineflower in the vicinity of Prunedale (CDFW 2024c).

The southern transmission route would extend southward on the San Joaquin Valley floor until reaching the Tehachapi Range southeast of Bakersfield. The transmission route would then run southeastward over the mountains before descending to the Antelope Valley en route to the Vincent Substation near Acton. The southern transmission route would pass through three counties and four ecoregions including the Great Valley, Sierra Nevada Foothills, Sierra Nevada, and Mojave Desert ecoregions. The land cover along the southern transmission route consists primarily of agricultural land on the valley floor, oak woodland and chaparral vegetative cover in the Tehachapis, and juniper woodland and desert shrub/scrub in the Antelope Valley (CDFW 2024). A number of protected plant and animal species occur in the vicinity of the southern corridor. Examples include blunt-nosed leopard lizard, SJKF, burrowing owl, Bakersfield cactus, and several other rare plant species. The transmission route traverses a small area of critical habitat for the California condor in the vicinity of Stallion Springs in the Tehachapis (CDFW 2024c).

As described above, the outside transmission corridors pass through regions containing numerous protected plant and animal species which would be subject to potential impacts due to construction and operation of the transmission lines. As part of the approval and environmental review processes for each transmission project, full coverage ground surveys would be required to determine the presence or absence of these species within the corridor, similar to those specified above in MMs BIO-1 and BIO-2. If individuals of these species are found to be present, then the avoidance measures specifically tailored for each species would be required to prevent direct impacts to the affected species and their habitats, similar to those set forth in MMs BIO-3 through BIO-13.

The outside transmission corridors would pass through areas containing wetlands, jurisdictional waters, streams or riparian areas, but it is expected that the transmission projects would be designed to span such features to avoid potential impacts. Similarly, the very small footprints and wide spacing of transmission towers would not interfere with wildlife movements and migration patterns. The potential for avian collisions or electrocution are expected to be minimized by following APLIC guidance for transmission design, similar to the measure specified for the VCIP projects in MM BIO-14.

With regard to local plans and policies, utilities infrastructure is typically permitted in all local zoning districts, so there would be no conflicts between the outside transmission lines and local plans and policies. Regarding habitat conservation plans, the transmission corridors do not traverse any lands subject to HCPs or NCCPs (CDFW 2024c). In the event the transmission lines were to be subject to future HCPs, utilities infrastructure is typically included as a “covered activity” in such plans, which would require compliance with the applicable provisions of the plans such as payment of mitigation fees.

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4.4.3.3. CUMULATIVE IMPACTS

The study area for cumulative biological impacts varies 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 minimum extent represented by the VCIP Plan Area, and the maximum extent encompassing lands within 10 miles of the Plan Area. Accordingly, the cumulative projects considered in this analysis include projects within 10 miles of the Plan Area; these projects are listed in Table 4.0-2 and consist mainly of solar PV projects. The total land area covered by these completed, approved, and pending projects is approximately 39,933 acres, of which non-solar projects comprise about 1,463 acres.

The Plan Area includes habitat for several protected plant and animal species. Prior to construction of each VCIP energy and infrastructure project, full coverage ground surveys would be required to determine the presence or absence of these species at the given project site, as specified above in MMs BIO-1 and BIO-2. If individuals of these species are found to be present, then the avoidance measures specified in the MMs BIO-3 through BIO-13 for each affected species would be implemented to prevent direct impacts to the species. With respect to habitat impacts, VCIP implementation would not have a significant impact upon foraging habitat of Swainson's hawks, other raptors or migratory bird species, SJKF, or American badger, given the abundance of available foraging habitat in the area. Individual solar projects within the 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 to mitigate the impact to burrowing owl habitat, as specified in MM BIO-9. The potential impacts of VCIP implementation upon wildlife movement through the Plan Area would be avoided through project design features such as wildlife friendly fencing and leaving canals and ditches outside the fenced facility footprints. VCIP projects could result in potential impacts to jurisdictional wetlands or riparian habitat, but any such impacts would be mitigated through implementation of MM BIO-15. In summary, all potential impacts to special-status animal species and habitats as a result of VCIP energy and infrastructure development would be avoided or reduced to less-than-significant levels through applicable mitigation measures. The VCIP implementation would not conflict with local plans or policies or HCPs. The potential cumulative impacts associated with VCIP energy and infrastructure development are discussed below.

Regarding 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 VCIP implementation, as specified in MMs BIO-1 through BIO-13. 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 VCIP implementation, as mitigated, *would not be cumulatively considerable*.

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 VCIP Plan Area, combined with the development of the other cumulative projects within a 10-mile radius of the Plan Area,

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would result in a reduction of about 116,459 acres in available foraging habitat for Swainson's hawks. However, as discussed under Impact BIO-8 above, approximately 941,879 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 sufficient surplus habitat to support additional pairs of Swainson's hawks. Therefore, the cumulative impact to Swainson's hawk foraging habitat would be *less than significant* and the impact of VCIP implementation *would not be 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-9, to reduce the impact to a less than significant level. In anticipation that this would occur wherever necessary, the cumulative impact to burrowing owl habitat would be *less than significant*, and the impact of VCIP implementation *would not be cumulatively considerable*.

VCIP energy and infrastructure 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-15. 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 cumulative impact to wetland and riparian habitat would be *less than significant* and the impact of VCIP implementation, as mitigated, *would not be cumulatively considerable*.

Neither the VCIP projects nor any other cumulative projects would interfere with wildlife movement corridors or migration patterns. Over 95 percent of the cumulative projects comprise solar facilities, which would all include wildlife friendly fencing, similar to that specified for VCIP projects in MM BIO-12g, to allow through movement of SJKFs or other species that may disperse through the area. Therefore, the cumulative impact to wildlife movement corridors would be *less than significant*, and the contribution of the VCIP implementation, as mitigated, *would not be cumulatively considerable*.

None of the cumulative projects, including VCIP projects, would conflict with local plans and policies protecting biological resources, or conflict with an applicable HCP or a NCCP. As such, there would be no cumulative impact in this regard, and the VCIP projects would make *no contribution* to any such cumulative impact in the near term.

In summary, the 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*.

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4.5. CULTURAL and TRIBAL CULTURAL RESOURCES

This section includes the following discussion and analysis related to cultural resources and tribal cultural resources: existing environmental setting; regulatory context; criteria and methodology for evaluating impacts; and results of the impact assessment, including identification of potentially significant impacts and corresponding mitigation measures to avoid or substantially lessen such impacts to the extent feasible.

The discussion in this section is based on the Cultural Resources Review Report prepared for the proposed VCIP by Basin Research Associates in November 2024. The cultural resources report is incorporated into this PEIR by reference, as provided under CEQA Guidelines section 15150. The cultural resources report is available for review at the District's headquarters in Fresno, where it is kept administratively confidential as required by law pursuant to Government Code section 7927.005 (formerly section 6254.10) of the California Public Records Act and CEQA Guidelines section 15120(d), which provide that no document prepared pursuant to CEQA that is available for public examination shall include "information about the location of archaeological sites and sacred lands, or any other information that is subject to the disclosure restrictions" of the California Public Records Act. (See *Clover Valley Foundation v. City of Rocklin* (2011) 197 Cal.App.4th 200, 221 ["CEQA's exclusion of archaeological site information from an EIR reflects the state's strong policy in protecting Native American artifacts"].)

PEIR Scoping Comments

During the PEIR scoping process, the District received two letters containing comments regarding cultural resources (see PEIR Scoping Report in Appendix A of this document). The comments that are relevant to this PEIR under CEQA are summarized below.

Native American Heritage Commission (NAHC)

The NAHC comment letter provides an overview of CEQA's requirements related to historical and tribal cultural resources. The letter also sets forth the detailed requirements for tribal consultation under Assembly Bill 52 (AB 52, 2014) and Senate Bill 18 (SB 18, 2004). The NAHC recommends early consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of the proposed project as early as possible to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources.

Leadership Council for Justice & Accountability and Central California Environmental Justice Network (CCEJN)

The comment letter from CCEJN states: "Regarding cultural resources, we support the comments made by the Native American Heritage Commission in its February 9, 2024 letter."

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4.5.1. Environmental Setting

Study Methodology

The research conducted for the VCIP cultural resources report by Basin Research Associates included a prehistoric and historic site records search for all recorded sites within the proposed VCIP boundary through the California Historical Resources Information System, Southern San Joaquin Valley Information Center, California State University (CSU) Bakersfield. In addition, pertinent literature and archival records available on the web, the Bancroft Library at the University of California, Berkeley, and on file at Basin Research Associates were reviewed. Specialized listings consulted included the most recent updates of the *National Register of Historic Places*, *California Historical Landmarks*, *California Register of Historical Resources*, *California Points of Historical Interest*, 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, and similar documents.

The NAHC was contacted for a search of the *Sacred Lands Inventory*. The NAHC record search was negative for tribal cultural resources in the immediate vicinity of the VCIP Plan Area. Letters soliciting additional information were sent to eight Native American individuals/groups recommended by the NAHC, and two responses were received. The Amah Mutsun Tribal Band stated that the Plan Area is outside of their tribal territory and had no comments. A representative of the Santa Rosa Rancheria Tachi Yokut Tribe (Tachi Yokut Tribe) provided extensive comments regarding suggestions on research, field survey, and mitigation measures.

The District is currently conducting AB 52 consultation with the Tachi Yokut Tribe, which to date has involved correspondence and several meetings between the District and the Tribe. During this consultation process, the Tachi Yokut Tribe has provided information on tribal cultural resources with cultural value to the tribe. In particular, the tribal representatives indicated that “[t]he Fresno Slough is an important geographic and hydrographic point for the Yokut. It is the area that connects the Northern and Southern Valley Yokut.” (The current alignment of Fresno Slough runs parallel to the eastern Plan Area boundary at a distance ranging from approximately 3 to 7 miles from the Plan Area, although the eastern margins of the Plan Area have a high sensitivity for archaeological resources due to proximity to Fresno Slough.) (See Figures 4.5-1 and 4.5-2.) The Tribe has also recommended mitigation measures related to tribal cultural resources. The District’s AB 52 consultation with the Tachi Yokut Tribe is ongoing.

To provide guidance for subsequent project-level evaluation of cultural resources within the Plan Area, Basin Research Associates adapted the archaeological sensitivity models for prehistoric archaeological resources developed by the Far Western Anthropological Group for Caltrans for five counties (Fresno, Kern, Kings, Madera and Tulare) in Caltrans District 6 (Basin Research 2024). The adapted model includes sensitivity mapping which reflects the potential for both surface and subsurface resources within the Plan Area. The sensitivity model is described in greater detail below.

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Tribal Cultural Resources

Ethnography

Prehistoric occupation and use of the San Joaquin Valley occurred from perhaps as early as 12,000 years ago. The wetland environment of Tulare Lake would have provided a favorable environment for prehistoric indigenous populations 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 Plan Area is located within both the Northern and Southern Valley Yokuts territory, within the San Joaquin Valley. The Northern Valley Yokuts territory flanked the San Joaquin River from south of Bear Creek to south of present-day Mendota. The Southern Valley Yokuts occupied the area south of Fresno along the Fresno Slough extending to and around Tulare Lake. The Yokutsan-speaking people numbered approximately 18,000 and were dispersed in 40 to 50+ small tribelets, speaking at least 21 dialects. 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.

The Southern Valley Yokuts tribe known as the *Tachi (Tache)*, the northernmost of the three Tulare Lake tribes, occupied the Plan 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.

Two Southern Yokut ethnographic villages were located in the VCIP Plan Area. These were: 1) the village of *Udjiu* located east of Coalinga on Los Gatos Creek; and 2) the village of *Golon* located south of Huron. In addition, the *Tachi* village of *Waiu* 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 11 miles east/southeast of the Plan Area in Kings County. The "Santa Rosa Rancheria" is a designated State of California Ethnic site.

Prehistoric Archaeology

The literature search described earlier in this section revealed that a total of 31 prehistoric resources have been recorded in the Plan Area, including nine prehistoric sites and 22 prehistoric isolates (i.e., isolated artifacts). The prehistoric sites include five lithic scatters and four occupation sites. The nine sites occur in two clusters, as follows: Cluster one ("1") is located along the eastern Plan Area boundary along the prehistoric extent of Fresno Slough west of Tranquillity and south of Mendota; and Cluster two ("2") is located along the western boundary at the confluence of Los Gatos Creek and Jacalitos Creek east of Coalinga. Cluster 2 includes a location attributed to the Tache Yokut village of *Udjiu*.

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The 22 isolated prehistoric finds are clustered in the approximate northern one-third of the Plan Area. None of the finds appear to be indicative of additional surface or subsurface resources. The prehistoric isolates include chipped stone waste and tools (flakes, bifaces, and cores), groundstone artifacts (possible mano; portable mortar, bowl mortar, steatite bowl fragments) and an isolated non-chronologically diagnostic shell bead. Prehistoric isolated finds are not eligible for listing on either the National Register of Historic Places (NRHP) or the California Register of Historical Resources (CRHR).

The NAHC indicated that a search of the sacred lands file was negative for the presence of tribal cultural resources in the immediate Plan Area. No known, traditional or contemporary Native American use areas and/or other features of cultural significance have been identified in or adjacent to the proposed VCIP Plan Area. Continued consultation with the Santa Rosa Rancheria Tachi Yokut Tribe is in progress in regard to potential tribal cultural resources.

Historic-Era Resources

Hispanic Period (1772 – 1848)

The Southern Valley Yokuts first encountered Europeans when Spanish explorers visited the area in approximately 1772. After the initial era of exploration within the province of Alta California, four institutions were used to settle the land: the missions, the presidios, the pueblos, and the ranchos. For the most part, Spanish occupation in California focused mainly along the coast while exploration parties also visited the interior or launched limited punitive expeditions against Native peoples fleeing the mission system.

Spanish and Mexican exploring expeditions in the vicinity of the Plan Area generally followed the Fresno Slough and vicinity of Tulare Lake. Exploration and Hispanic settlement in what was to become Fresno County (County) was minimal due to geographic features including the almost impenetrable *tulares* (Tule marsh) of the San Joaquin Valley, absence of reliable freshwater, and generally dry, sandy washes which became raging streams after heavy rainfall. Reportedly in 1805, Gabriel Moraga was the first Hispanic explorer to view the Kings River, Rio de los Santos Reyes (River of the Holy Kings) and the San Joaquin River. The next year his expedition passed through the area north of present-day Firebaugh just outside of the northeast boundary of the VCIP Plan Area reaching the Sierra foothills.

In 1833, Mexican contact resulted in 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 reduced the Yokuts population.

The Old Los Angeles Trail (*El Camino Viejo*; Westside Trail) - formerly a Native American trail skirted the eastern slope of the Coast Range foothills. Portions of the trail passed through or were adjacent to the VCIP boundary, probably along the alignment or close to the alignment of I-5. The *Poso de Chané*, a pool or waterhole on Los Gatos Creek approximately six miles east of Coalinga to the east of the current I-5 alignment, was on the site of the *Village of Udjiu* in the VCIP Plan Area. This was also the site of a small agricultural community made up of a dozen or so Spanish and Mexican families. Reportedly, the floods of 1861 and 1862 obliterated the waterhole and the community was abandoned.

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American Period (1848-Present)

In 1848, California became a United States territory as a result of the Treaty of Guadalupe Hidalgo which ended the war with Mexico. The Gold Rush began in 1848 and brought a massive influx of immigrants to California from all parts of the world. California was formally admitted as a state in 1850.

The VCIP Plan Area is within the original boundary of the County which was created in 1856 from parts of Merced and Mariposa counties. Settlement of the valley and Plan Area occurred due to a combination of factors: reclamation of marsh land and other land for agriculture; the availability of federal lands for purchase to expand agricultural holdings and communities; and the establishment of major economical and reliable transportation routes. Arid conditions kept the west side of the valley sparsely populated with little productive agriculture until the completion of the San Luis Canal/California Aqueduct in the early 1970s which brought needed water for agriculture and domestic use to the west side of the County.

Historic Resource Sites

There are 75 recorded historic resources within the Plan Area, including 17 historic archaeological sites, 11 isolated historic finds, and 47 built environment resources. There is one multicomponent site that includes a prehistoric lithic scatter in association with a historic trash scatter, a fence line and a road segment.

The historic archaeological sites include: seven trash deposits or scatters; a ranch site; three homestead foundations; a road (part of multi-component site); a ditch; two locations with metal tanks; one site with multiple oil industry extraction-related features that has been impacted by grading; and a former Southern Pacific Railroad alignment.

Historic finds recorded as “isolates” include isolated historic objects as well as a water well; a 1945 shipping pump with a shack; two concrete pads bisected by a pipeline; and a historic trash scatter of dispersed isolates.

The historic built environment resources include: ten buildings/complexes; seven water conveyance features; four roads/freeways; 17 bridges; seven transmission lines; and three substations.

No known Hispanic Period expedition routes have been recorded in or adjacent to the Plan Area. One Hispanic Period trail/road, the *El Camino Viejo*, also known as the Old Los Angeles Trail or Westside Trail, (presumably a former Native American trail) “skirted the eastern slope of the Coast Range foothills.”

Two small Hispanic Period settlements/use areas are located along the western VCIP boundary and include:

A small agricultural community, reportedly on the site of the Tachi Yokuts Village of *Udjiu*, made up of a dozen or so Spanish and Mexican families, presumably associated with the settlement, *Poso de Chané*, is said to have been a regular stopover along *El Camino Viejo* until destroyed by the floods of 1861 and 1862.

Similarly, Cantua Creek (*Arroyo de Cantua*) was a stopping place on the *El Camino Viejo* and was a gathering place for several bandit gangs to drive herds of stolen horses south to a ranch in Sonora, Mexico.

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Listed Historic Properties

The Plan Area includes three listed or potential eligible historic properties for either the NRHP and/or CRHR, as described below:

San Luis Canal/California Aqueduct, San Luis Canal Division (P-10-006207 CA-FRE-003645H) has been determined eligible for inclusion on the NRHP (Criterion A [largest and most significant of the water conveyance systems developed as part of the Central Valley Project and State Water Project] and Criterion C [complex and innovative design necessary to redistribute water throughout the State of California on a massive level], with a period of significance 1960-1974).

Coalinga Operations & Maintenance Subcenter (P-10-007160) – is an element of a potential NRHP District, the San Luis Division or Central Valley Project/State Water Project Historic District that appears eligible for the NRHP/CRHR under criteria A/1 and C/3.

The ***Poso de Chané*** east of Coalinga, listed in *California History Plan* and *California Inventory of Historic Resources* under the theme of Exploration / Settlement, located within the Plan Area. The latter text states:

Poso is a Spanish word meaning springs or wells. The word, *Chane*, comes from the name of a Yokuts Indian Chief. An Indian village is said to have been on this spot and became a trading point for the Yokuts Indians of the coastal region. Spanish and Mexican families came and settled in this vicinity and still later, American families resided here. *Poso de Chane* is said to have been a regular stopover for travelers along El Camino Viejo. The village was destroyed by floods in 1861 and 1862. (CAL/OHP 1976:151).

No recorded prehistoric archaeological sites within the Plan Area are listed or potentially eligible for listing on the NRHP or CRHR.

Other Unrecorded Potential and/or Known Sites

There are four place names that previously merited post offices in the late 1880s and early 1900s but are no longer present. These include Cadogan (20 miles south of Mendota); Hayes/Hayes Station (18 miles southwest of Mendota); and Oilfields (9 miles northeast of Coalinga and northeast of Huron). Potential historic resources could be present in the immediate vicinity of these former settlements.

Archaeological Sensitivity

Archaeological sensitivity models for prehistoric archaeological resources were developed by the Far Western Anthropological Group for Caltrans for five counties (Fresno, Kern, Kings, Madera and Tulare) in District 6, which includes the Plan Area (Basin Research 2024). These models were developed with the objective of providing guidance on cultural resources for future Caltrans projects within this region that might involve both surface and subsurface resources. Surface resources are defined as prehistoric archaeological deposits that were formed on a landform that is now at or near the present ground surface, including those capped by built structures or covered by artificial fill. A prehistoric archaeological site is considered “buried” if it is associated with a formerly stable land surface that was covered by alluvium, colluvium, and/or wind-blown sediments in response to natural geological processes.

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Archaeological sensitivity models for surface resources and buried resources were developed by Basin Research Associates for the Plan Area, and are shown in Figures 4.5-1 and 4.5-2, respectively. The models are based on a review of the basic factors that are known to influence the location of prehistoric resources to assess the potential for prehistoric sites in the Plan Area. Archaeological sensitivity modeling attempts to identify the range of common environmental variables that made a location or area favorable for occupation. The models are based on three key environmental factors generally identified as predictive of prehistoric site location, including: distance-to-water, slope, and distance to confluence.

Surface Prehistoric Resources

The local model for surface prehistoric resources in the Plan Area (Figure 4.5-1) indicates that areas with the highest sensitivity for archaeological resources are located near a stream, river, lake or other water source associated with relatively level surface slopes. Highest/High/Moderate sensitivity zones, covering approximately 57,000 acres (or 10.6 percent) of the Plan Area, are located up to 220 meters from water course alignments with slopes ranging up to 12 percent at elevations less than 2,950 meters. Low and Lowest sensitivity zones cover approximately 478,000 acres (or 89.3 percent), including the majority of the Plan Area. The model suggests prehistoric surface resources within the Plan Area are most likely to be located along the western VCIP boundary where ephemeral streams exit the foothills and terminate in the valley floor, and in small areas adjacent to the San Joaquin River/Fresno Slough alignment along the eastern Plan Area boundary.

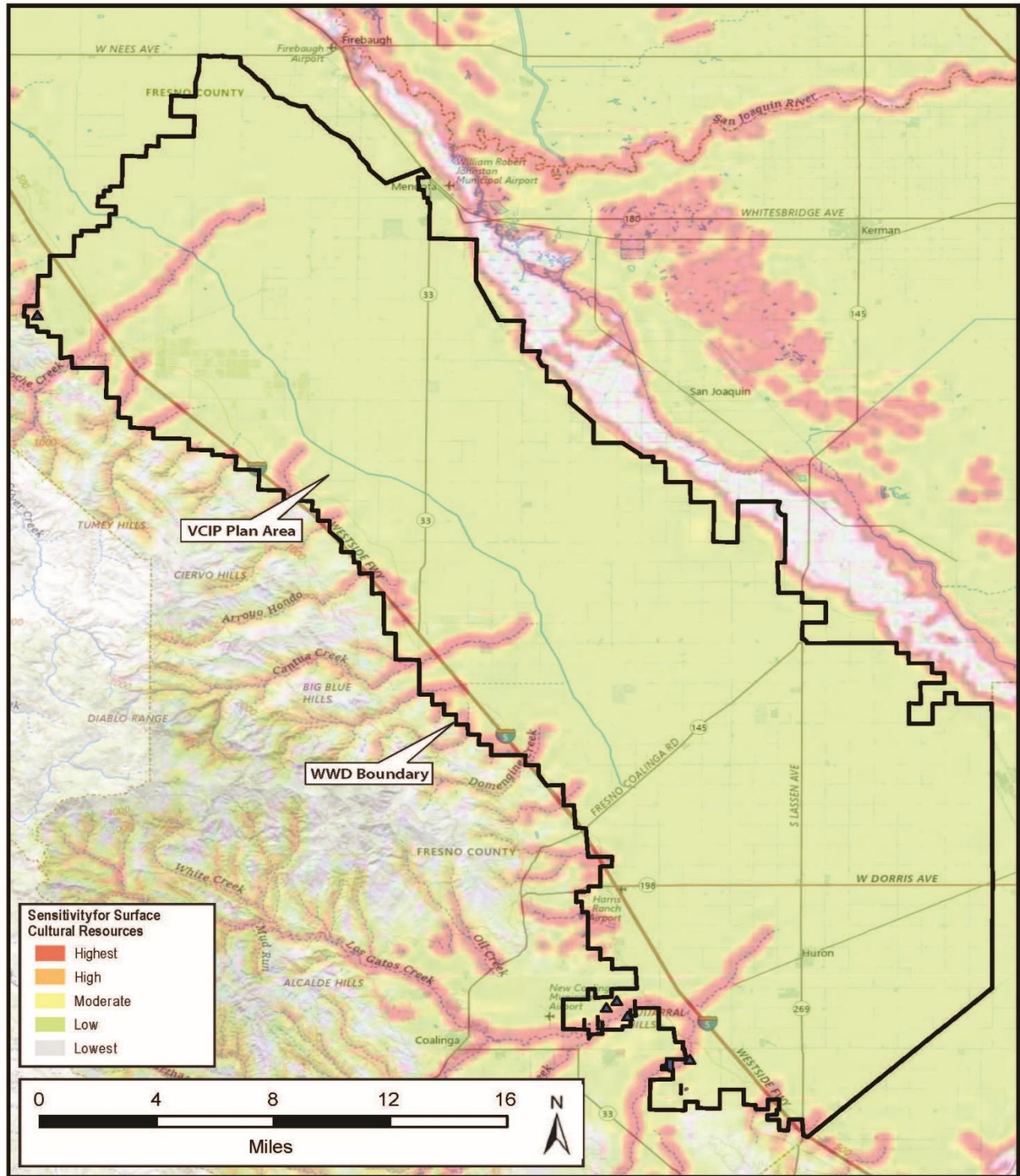
In this context it is important to note that the agricultural lands within the Plan Area have been subject to intensive cultivation for many decades, including annual plowing and disking. Most of these lands have also been deep ripped to depths of up to three feet. As such, the near-surface soils have been subject to heavy disturbance for many years. 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 VCIP implementation could expose as-yet undetected resources.

Subsurface Prehistoric Resources

Subsurface deposits associated with human occupation in the Plan Area (Figure 4.5-2) may be present with landforms that developed during the Terminal Pleistocene and the Holocene (i.e., last 14,000 years). The discovery and analysis of buried archaeological sites are important to fill in details of human occupation in the Plan Area that may only be partially evident from surface cultural resources. The subsurface sensitivity model indicates that there is a low potential for older buried landforms (e.g., Early Holocene) to be associated with human occupation while younger Holocene buried surfaces have a higher potential for subsurface resources.

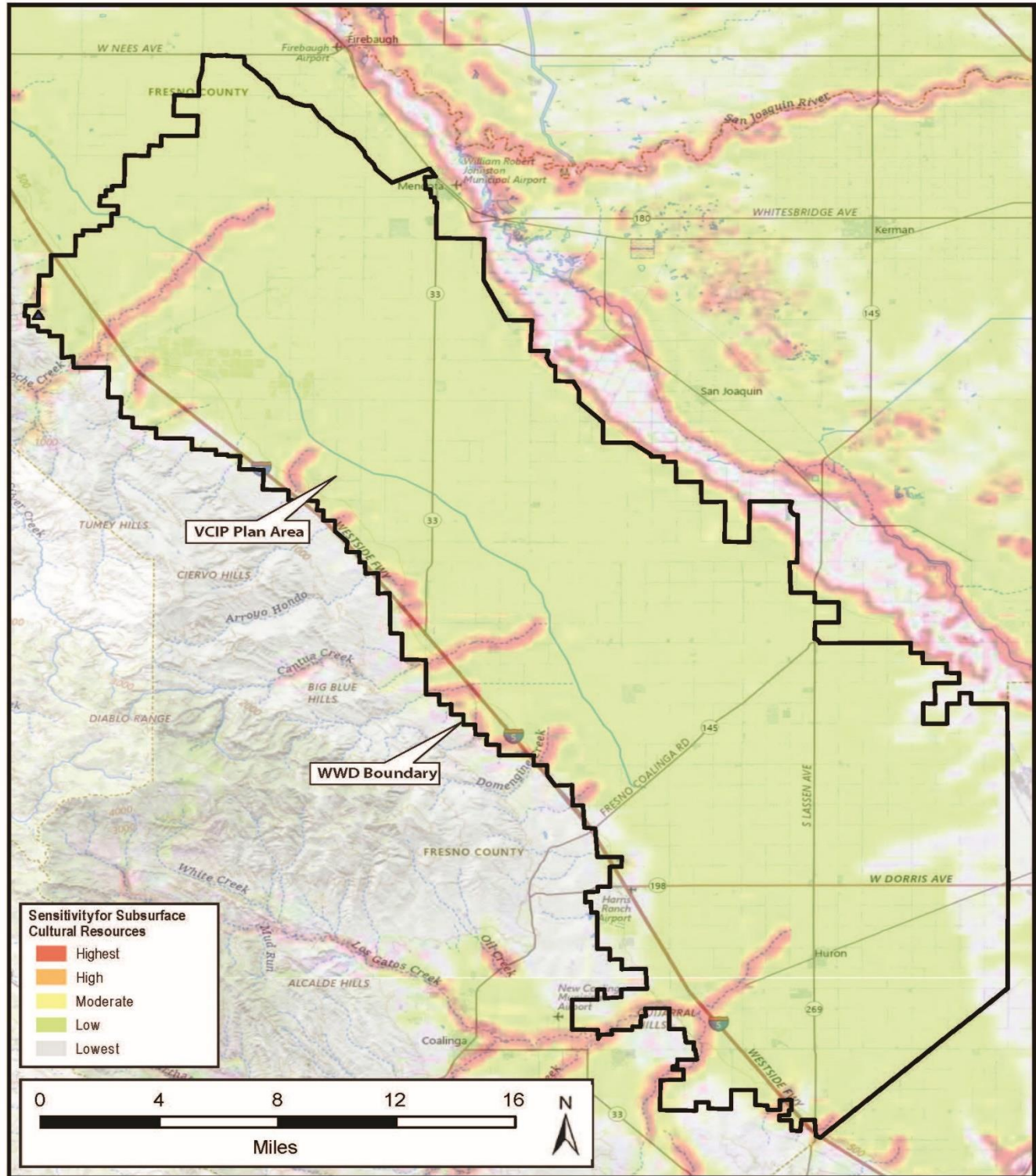
The potential for subsurface prehistoric resources within the Plan Area generally corresponds to the sensitivity model for surface archaeological resources described above. Highest/High/Moderate sensitivity zones, covering approximately 48,000 acres (or 9 percent) of the Plan Area are located up to 220 meters from the stream alignments with slopes ranging up to 12 percent at elevations less than 2,950 meters. Low and Lowest sensitivity zones cover approximately 486,600 acres (or 91 percent), including the majority of the Plan Area and nearly all of the valley floor portion of the Plan Area. Locations with the highest probability for subsurface resources are along the western VCIP boundary where ephemeral streams exit the foothills and terminate in the valley floor, and in small areas adjacent to the San Joaquin River/Fresno Slough alignment along the eastern VCIP boundary.

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Source: Basin Research Associates

Sensitivity for Surface Prehistoric Cultural Resources
Figure 4.5-1



Source: Basin Research Associates

Sensitivity for Subsurface Prehistoric Cultural Resources
Figure 4.5-2

Historic Archaeological Resources

No models are available to predict historic archaeological resource sensitivity. In general, these resources are associated with the Hispanic and American periods and include the built environment and associated features. Recorded built environment resources in the Plan Area include buildings/complexes, water conveyance features, roads/freeways, bridges, transmission lines, and substations. Reviews of topographic and historic maps and documents will identify additional potential historic archaeological resources within a development site including former settlements, ranches, irrigation ditches and canals, reservoirs, paved and unimproved roads, electric transmission lines, gas pipelines, etc. and landing strips.

4.5.2. Regulatory Context

Introduction

The following is an overview of the principal statutes, regulations, plans and programs related to cultural and tribal cultural resources that may apply to implementation of the proposed VCIP.

Federal

There are no federal laws, orders, regulations, or standards relating to cultural or tribal cultural resources that are applicable to the VCIP.

State of California

CEQA Statute and Guidelines

Public agencies under CEQA must consider the effects of their actions on both “historical resources” and “unique archaeological resources.” Pursuant to PRC section 21084.1, a “project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment.” (CEQA Guidelines, section 15064.5(b).) PRC section 21083.2(a) requires agencies to determine whether a proposed project would have an effect on “unique” archaeological resources.

Historical resources include resources listed in or determined to be eligible for listing in the CRHR (PRC, section 21084.1; CEQA Guidelines, section 15064.5(a)). The CRHR includes resources listed in or formally determined eligible for listing in the NRHP, as well as some California State Landmarks and Points of Historical Interest.

Properties of local historical significance that have been designated under a local preservation ordinance (local landmarks or landmark districts) or that have been identified in a local historical resources inventory may be eligible for listing in the CRHR and are presumed to be “historical resources” for purposes of CEQA unless a preponderance of evidence indicates otherwise (PRC, section 5024.1; CEQA Guidelines, section 15064.5(a)(2)). Unless a historical resource becomes ineligible for inclusion in the CRHR due to changed circumstances as provided in PRC section 5024.1(g)(4), or there is a preponderance of evidence indicating that it is otherwise not historically or culturally significant, a lead agency should consider the resource a historical resource under CEQA.

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In addition to resources listed on the CRHR or included in a local register of historical resources as defined by PRC section 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC section 5024.1(g), the lead agency has discretion to treat an object, building, structure, site, area, place, record, or manuscript as a historical resource for CEQA purposes if the lead agency has substantial evidence showing that such a resource is historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California (PRC, section 21084.1; CEQA Guidelines, section 15064.5(a)(3)). Generally, a lead agency considers a resource to be “historically significant” if the resource meets the criteria for listing on the CRHR, including the following:

- A. An historical resource 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 local, national, or California history.
 - 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 yielded or may be likely to yield information important to the prehistory or history of the local area, 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).

(14 CCR, section 4852(b)-(d).)

For purposes of Criterion B, the California Register regulations define “integrity” as “the authenticity of an historical resource’s physical identity evidenced by the survival of characteristics that existed during the resource’s period of significance,” that is, it must retain enough of its historic character or appearance to be recognizable as a historical resource (14 CCR, section 4852(c)). 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. (*Ibid.*) A property must retain most of these qualities to possess integrity.

The fact that a resource is not listed or determined to be eligible for listing in the CRHR, or not included in a local register of historical resources pursuant to PRC section 5020.1(k), or identified in an historical resources survey meeting the criteria in PRC section 5024.1(g) does not preclude a lead agency from determining that the resource may be a historical resource (PRC, section 21084.1; CEQA Guidelines Section 15064.5(a)(4)). CEQA also distinguishes between two classes of archaeological resources: archaeological sites that meet the definition of a historical resource, as described above, and “unique archaeological resources.” (See PRC, sections 21084.1, 21083.2(g).) Under CEQA, an archaeological resource is considered “unique” if it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that the resource meets any of the following criteria:

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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 (PRC, section 21083.2(g)).

CEQA states that if a proposed project would result in an impact that might cause a substantial adverse change in the significance of a historical resource, then an EIR must be prepared and mitigation measures considered. A “substantial adverse change” in the significance of a historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historical resource would be materially impaired (CEQA Guidelines, section 15064.5(b)(1)).

CEQA Guidelines section 15064.5(c) also provides specific guidance on the treatment of archaeological resources, depending on whether they meet the definition of a historical resource or a unique archaeological resource. If the site is not a historical resource, but meets the definition of a unique archaeological resource, it must be treated in accordance with the provisions of PRC section 21083.2. PRC section 21083.2(b) states that if it can be demonstrated that a project will cause damage to a unique archaeological resource, the lead agency may require reasonable efforts to be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. Examples of that treatment, in no order of preference, may include, but are not limited to:

1. Planning construction to avoid archaeological sites.
2. Deeding archaeological sites into permanent conservation easements.
3. Capping or covering archaeological sites with a layer of soil before building on the sites.
4. Planning parks, greenspace, or other open space to incorporate archaeological sites (PRC, section 21083.2(b)).

When an archaeological resource is listed in or is eligible to be listed in the CRHR, PRC section 21084.1 controls, and it states that “[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.” PRC sections 21083.2 and 21084.1 operate independently to ensure that potential effects on archaeological resources are considered as part of a project’s environmental analysis.

Assembly Bill 52 (AB 52) – Tribal Cultural Resources

AB 52 (2014) provides protections for tribal cultural resources. Under PRC section 21074, tribal cultural resources include site features, places, cultural landscapes, sacred places or objects that are of cultural value to a California Native American tribe that are eligible for listing or listed on the CRHR or a local historic register, or that the lead agency has determined to be a significant tribal cultural resource. All lead agencies reviewing projects under CEQA are required, if formally requested by a culturally affiliated California Native American Tribe, to consult with such tribe regarding the potential impacts of a proposed project on tribal

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cultural resources prior to the release of a negative declaration (ND), mitigated negative declaration (MND), or EIR (PRC, section 21080.3.1(b)).

If a potentially significant project effect exists, tribal consultation is to continue until mitigation measures are agreed upon, or either the tribe or lead agency concludes in good faith that an agreement cannot be reached (PRC, section 21080.3.2(b)). In the case of agreement, the lead agency is required to include the mitigation measure(s) in the environmental document and the related Mitigation Monitoring and Reporting Program (MMRP). If no agreement is reached, the lead agency nevertheless must impose all feasible mitigation measures necessary for a project to avoid or substantially lessen potentially significant adverse impacts on tribal cultural resources (PRC, section 21084.3).

Senate Bill 18 (SB 18) – Native American Cultural Places

SB 18 (2004) requires local governments to consult with California Native American tribes prior to amending or adopting a general plan or specific plan. As such, SB 18 is not applicable to the proposed VCIP because its implementation does not require any amendments to a general plan or specific plan. The statute is summarized here for informational purposes only.

The main objective of SB 18 is to preserve and protect California Native American cultural places, which can consist of:

- Native American sanctified cemetery, place of worship, religious or ceremonial site, or sacred shrine described in PRC section 5097.9; and,
- Native American historic, cultural, or sacred site, that is listed or may be eligible for listing in the CRHR pursuant to PRC section 5024.1, including any historic or prehistoric ruins, any burial ground, any archaeological or historic site described in PRC section 5097.993.

(Gov. Code, section 65352.3.)

Prior to adopting or amending a general or specific plan, local governments must consult with tribes that have requested consultation in accordance with California Government Code section 65352.3. The purpose of this consultation is to preserve, or mitigate impacts to, cultural places that may be affected by the general or specific plan amendment or adoption.

Native American Heritage Commission (NAHC)

The NAHC is responsible for inventorying Native American places of religious or social significance 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.

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California Public Records Act (CPRA)

The CPRA is codified as Government Code section 7920.000 *et seq.*¹ Government Code sections 7927.000 (formerly section 6254(r)) and 7927.005 (formerly section 6254.10) were enacted to protect archaeological sites from unauthorized excavation, looting, or vandalism. Section 7927.000 explicitly authorizes public agencies to withhold records from the public related to “Native American graves, cemeteries, and sacred places” and “Native American places, features, and objects” “maintained by, or in the possession of, the Native American Heritage Commission, another state agency, or a local agency.” Section 7927.005 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.” As discussed above, CEQA Guidelines section 15120(d) provides that no document prepared pursuant to CEQA that is available for public examination shall include “information about the location of archaeological sites and sacred lands, or any other information that is subject to the disclosure restrictions” of the CPRA.

California Health and Safety Code Sections 7050.5 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. The penalty does not apply, however, “to a person who, under authority of law, removes the remains for reinterment, or performs a cremation, reduction, or hydrolysis.” (*Id.* at section 7052(a).)

Fresno County

Fresno County General Plan

The Fresno County General Plan (Fresno County 2024b) contains the following goals and policies related to cultural resources that may be relevant to the VCIP:

Open Space and Conservation Element

J. Historical, Cultural, and Geological Resources

- GOAL OS-J** To identify, protect, and enhance Fresno County’s important historical, archeological, paleontological, geological, and cultural sites and their contributing environment, and promote and encourage preservation, restoration, and rehabilitation of Fresno County’s historically significant resources in order to promote historical awareness, community identify [sic], and to recognize the county’s valued assets that have contributed to past county events, trends, styles of architecture, and economy.

¹ The CPRA, previously commencing with Government Code section 6276.50, was recodified by the CPRA Recodification Act of 2021, which was “intended to be entirely nonsubstantive in effect” (Gov. Code, sections 7920.000, 7920.100). {00081424.1}

Policy OS-J.2

Historic Resources Consideration

The County shall consider historic resources during preparation or evaluation of plans and discretionary development projects that may impact buildings or structures [sic] For a project projected on a property that includes buildings, structures, objects, sites, landscapes, or other features that are 45 years of age or older at the time of permit application, the project applicants shall be responsible for preparing and implementation the recommendations of a historical resources evaluation completed by qualified cultural resources practitioners.

Policy OS-J.3

Minimize Impacts

Whenever a historical resource is known to exist on a proposed project site, the County (i.e., Fresno County Historic Landmarks and Records Advisory Commission) shall evaluate and make recommendations to minimize potential impacts to said resource.

Policy OS-J.4

Cultural Resources Protection and Mitigation

The County shall require that discretionary development projects, as part of any required CEQA review, identify and protect important historical, archeological, tribal, paleontological, and cultural sites and resources. For projects requiring ground disturbance and located within a high or moderate cultural sensitivity areas, a cultural resources technical report may be warranted, including accurate archival research and site surveys conducted by qualified cultural resources practitioners. The need to prepare such studies shall be determined based on the tribal consultation process and initial outreach to local or state information centers.

Policy OS-J.5

Archaeological Sites Confidentiality

The County shall, within the limits of its authority and responsibility, maintain confidentiality regarding the location of archeological sites in order to preserve and protect these resources from vandalism and the unauthorized removal of artifacts.

Policy OS-J.6

Native American Consultation

The County shall solicit the views of the local Native American community in cases where development may result in disturbance to sites containing evidence of Native American activity and/or sites of cultural importance.

4.5.3. Environmental Impact Analysis

METHODOLOGY

The discussion in this section is based on the Cultural Resources Review Report prepared for the proposed VCIP by Basin Research Associates in November 2024. The cultural report is incorporated into this PEIR by reference, as provided under CEQA Guidelines section 15150. The cultural resources report is available for review at the District's headquarters in Fresno, where it is kept administratively confidential as required by law

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pursuant to California Public Records Act Section 7927.005. The details of Basin Research Associates' methods are presented in Section 4.5.1. *Environmental Setting*.

To provide guidance for subsequent project-level evaluation of cultural resources within the Plan Area, Basin Research Associates adapted the archaeological sensitivity models for prehistoric archaeological resources developed by the Far Western Anthropological Group for Caltrans for five counties (Fresno, Kern, Kings, Madera and Tulare) in Caltrans District 6 (Basin Research 2024). The adapted model includes sensitivity mapping which reflects the potential for both surface and subsurface resources within the Plan Area. The sensitivity model is described in Section 4.5.1. *Environmental Setting*, and the sensitivity mapping is shown in Figures 4.5-1 and 4.5-2.

SIGNIFICANCE CRITERIA

Based on Appendix G of the state CEQA Guidelines, implementation of the proposed VCIP would be considered to result in a significant impact related 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 CEQA Guidelines.
- b. Cause a substantial adverse change in the significance of an archaeological resource as defined in Section 15064.5 of the CEQA Guidelines.
- c. Disturb any human remains, including those interred outside of dedicated cemeteries.

[Note: CEQA definitions for historical and archaeological resources are discussed in Section 4.5.2. *Regulatory Context* above.]

Based on Appendix G of the state CEQA Guidelines, the implementation of the proposed VCIP would be considered to result in a significant impact related to **tribal cultural resources** if it would:

- a. Cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC, 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 in a local register of historical resources as defined in Public Resources Code § 5020.1(k), or
 - 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 PRC, section 5024.1. In applying the criteria set forth in subdivision (c) of PRC, section 5024.1, the lead agency shall consider the significance of the resource to a California Native American Tribe.

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4.4.3.1. DIRECT AND INDIRECT EFFECTS

Introduction

Implementation of the VCIP would allow multiple individual solar generation, energy storage, and infrastructure facilities within the Plan Area. The potential solar and energy storage projects would be developed within specific areas of the Plan Area known as DFAs. The DFAs would comprise a total of approximately 136,000 acres within the approximately 535,000-acre Plan Area. Due to the VCIP's conceptual nature, this PEIR provides guidance at a programmatic level regarding the potential occurrence of previously undiscovered cultural resources as indicated by the archaeological sensitivity mapping prepared for the Plan Area.

Impact CUL-1. Disturbance to Cultural Resources.

Implementation of the VCIP Energy Resource and Infrastructure Plans could have potentially adverse impacts on historical and archaeological resources (cultural resources) which may be present within the Plan Area. (*Less-than-Significant Impact with Mitigation*)

The cultural resources sensitivity mapping for the VCIP Plan Area, as shown in Figures 4.5-1 and 4.5-2, illustrates potential archaeological sensitivity for prehistoric cultural resources. This mapping suggests a generally low measure of risk for exposing surface and/or buried prehistoric archaeological materials during development of the potential VCIP projects. The sensitivity maps indicate that both surface and subsurface prehistoric archaeological resources are most likely to be located along the western VCIP boundary along the ephemeral streambeds that exit the foothills and terminate in the valley floor, and also within small areas that are adjacent to or intrude into the San Joaquin River/Fresno Slough alignment along the eastern VCIP boundary. However, as shown in Figures 4.5-1 and 4.5-2, the areas of surface sensitivity are slightly broader in extent than for subsurface cultural resources. As such, to ensure all reasonably foreseeable impacts related to cultural resources are identified, the following estimates of land coverage by culturally sensitive areas reflect the larger extent of the mapping for surface cultural resources in Figure 4.5-1. The areas mapped as Highest/High/Moderate sensitivity zones cover approximately 10 percent of the Plan Area and approximately 2,600 acres (1.9 percent) of the DFAs. Most of the valley floor portions of the Plan Area, including almost the entire area east of the San Luis Canal/California Aqueduct are in the Low/Lowest sensitivity zones, which represent approximately 90 percent of the Plan Area and approximately 98.1 percent of the DFAs.

Historic archaeological resources are more likely to be present at or in the near vicinity of former settlements and associated with ranching and agricultural activities as well as oil extraction activities, and transmission and transportation networks including trails, roads and freeways, water conveyance facilities and energy transmission and related infrastructure.

Both surface and subsurface construction disturbance could result in the loss of integrity of cultural data important to the prehistory and history of the San Joaquin Valley that could provide chronological information on human occupation, site formation processes, subsistence/settlement/spatial organization, and trade and exchange patterns. Furthermore, it is possible that Native American ancestral remains could be encountered

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as at least two prehistoric villages have been recorded within the VCIP plan area, and the area in the vicinity of Jacalitos Creek near Coalinga has a number of recorded prehistoric resources.

Construction activity associated with VCIP development could result in significant impacts to historical and archaeological resources. These potential activities include grading, excavation, and construction for solar and energy storage facilities, project substations, gen-tie lines, collection substations, and connecting transmission lines, and future decommissioning activities. The greatest potential for impacts to cultural resources due to VCIP implementation would occur in the areas mapped as Highest/High/Moderate sensitivity zones on Figures 4.5-1 and 4.5-2. A lower, but not insubstantial potential impact to cultural resources due to VCIP implementation would occur in the areas mapped as Low/Lowest sensitivity zones on Figures 4.5-1 and 4.5-2. These lower sensitivity zones have been highly altered and disturbed by agricultural activities, which may have disturbed or displaced historical or prehistoric artifacts at or near the ground surface. (Detailed descriptions of the sensitivity zones are provided in Section 4.5.1. *Environmental Setting*, under “Archaeological Sensitivity.”) While the past disturbance of the surface soil layers by agricultural activities reduce the potential for impacts to cultural resources associated with VCIP implementation, the VCIP would involve excavation and trenching that could unearth cultural resources at depth.

The potential impacts to cultural resources resulting from VCIP implementation would be reduced to less-than-significant levels by implementation of Mitigation Measure CUL-1 at the project-specific level.

Mitigation Measure CUL-1: Protection of Cultural Resources

To reduce potential impacts to cultural resources from VCIP implementation, the following mitigation measures are applicable at the project-specific level. The lands subject to development under VCIP are classified into five archaeological sensitivity zones as mapped on the Archaeological Sensitivity Maps prepared for the VCIP PEIR. The mitigation measures applicable to the five zones are separated into three groups, as follows: a) Measures applicable to all VCIP development; b) Measures applicable to lands with Highest/High/Moderate sensitivity (which are grouped together because these categories represent a continuum); and c) Measures applicable to lands with Low/Lowest sensitivity.

a) Measures Applicable to All VCIP Development

- i) **Retain Qualified Archeologist and Conduct Archaeological Review.** During the project-level environmental review process under CEQA, the project proponent shall retain a professional archaeologist consultant meeting the Secretary of the Interior’s Standards and having expertise in California prehistoric and historical archaeology (the Qualified Archaeologist). The Qualified Archeologist shall complete a due diligence archaeological review of the project site which shall include at a minimum: (1) an archival records search by the California Historical Resources Information System, Southern San Joaquin Valley Information Center, California State University Bakersfield (CHRIS/SSJVIC) for a 0.25 mile radius around the project site boundaries; (2) a review of historic sources and maps of the project site to determine historic sensitivity; and, (3) the results of a Sacred Lands File (SLF) by the NAHC. The results shall be reported in a Memorandum to File with appropriate graphics and any supporting documents.
- ii) **Cultural Resources Notice on Construction Plans.** The project proponent shall note on any plans that require ground disturbing excavation that there is potential for exposing buried cultural resources,

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including prehistoric Native American ancestral remains. Any archival archaeological site information supplied to the construction contractor shall be considered confidential.

- iii) **Worker Education and Awareness Program (WEAP) Training.** Prior to the issuance of building permits for each VCIP project, the Qualified Archeologist shall provide a cultural resources and tribal cultural resources sensitivity and awareness training program (WEAP) for all personnel involved in ground disturbing project construction, including field consultants and construction workers. If additional construction personnel join the project after the start of construction, additional trainings will be held. Documentation shall be retained demonstrating that all construction personnel attended the training.

The WEAP shall be developed by the Qualified Archaeologist in coordination with the Tribal Historic Preservation Officer (THPO) of the Santa Rosa Rancheria Tachi Yokut Tribe. The WEAP shall be conducted before any project-related construction activities begin at the project site. The WEAP shall include relevant information regarding sensitive cultural resources, including applicable regulations, protocols for avoidance, and consequences of violating State laws and regulations. The WEAP shall also describe appropriate avoidance and impact minimization measures for cultural resources that could be located at the project site and shall outline what to do and who to contact if any potential cultural resources are encountered. The WEAP shall emphasize the requirement for confidentiality and culturally appropriate treatment of any discovery of significance.

- iv) **Implement Procedures for Inadvertent Discoveries.** The Qualified Archaeologist shall be retained during all ground disturbing activity during construction and decommissioning for the project to provide assistance in the event of any unexpected archaeological discoveries during construction. Should previously unidentified cultural resources be discovered during construction of the project, all ground disturbing activities shall stop within 100 feet of the find, and the appropriate regulatory agency and the Santa Rosa Rancheria Tachi Yokut Tribe shall be notified immediately. The Qualified Archeologist shall assist with the review, identification and evaluation of the cultural resources to determine if they are historical resource(s) and/or unique archaeological resources or tribal cultural resources under CEQA.

If the Qualified Archaeologist determines that any cultural resources exposed during construction constitute a historical resource and/or unique archaeological resource or tribal cultural resource under CEQA, he/she shall notify the project proponent and other appropriate parties including the Tribe of the evaluation.

The Qualified Archaeologist shall recommend mitigation measures to mitigate to less-than significant any potential impact in accordance with California Public Resources Code Section 15064.5. Tribal cultural resources shall be evaluated in consultation with the Tribal Historic Preservation Officer (THPO) of the Santa Rosa Rancheria Tachi Yokut Tribe. Mitigation measures may include avoidance, preservation in-place, recordation, archaeological and tribal monitoring, archaeological testing and data recovery among other options. Construction within the 50-foot exclusion zone shall only be allowed to commence when mitigation has been completed.

The archaeologist shall document the resources using DPR 523 forms and file said forms with the California Historical Resources Information System, Southern San Joaquin Valley Information Center. The resources shall be photo-documented and collected by the archaeologist for submittal to the Santa Rosa Rancheria's Cultural and Historical Preservation Department. The archaeologist shall be

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required to submit to the appropriate regulatory agency for review and approval a report of the findings 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.

If significant archaeological deposits (or tribal cultural resources) are exposed during ground disturbing construction, a formal *Archaeological Monitoring Plan* (AMP) and/or *Archaeological Treatment Plan* (ATP) that may include data recovery shall be developed and implemented, as recommended by the Qualified Archaeologist. The AMP shall provide that the Santa Rosa Rancheria Tachi Yokut Tribe shall be given the opportunity to provide a Tribal Monitor during ground disturbing activities during both construction and decommissioning, within areas of the project site which have been determined by the Qualified Archaeologist to have a high potential to yield archaeological resources. Tribal participation would be dependent upon the availability and interest of the Santa Rosa Rancheria Tachi Yokut Tribe. The final details of the AMP and/or ATP, and treatment of significant cultural resources and/or tribal cultural resources, shall be determined by the project proponent in consultation with the approving agency and the THPO of the Santa Rosa Rancheria Tachi Yokut Tribe.

b) Measures Applicable to VCIP Development in Highest/High/Moderate Sensitivity Areas

- i) **Prepare Archaeological Resources Assessment.** The project proponent shall retain the Qualified Archaeologist to complete a formal *Archaeological Resources Assessment* (ARA) of any project site located within Highest/High/Moderate sensitivity areas as mapped on the Archaeological Sensitivity Maps prepared for the VCIP PEIR. The ARA shall include: (1) an archival records search by the California Historical Resources Information System, Southern San Joaquin Valley Information Center, California State University Bakersfield (CHRIS/SSJVIC) for a 0.25 mile radius around the project site boundaries; (2) a review of historic sources and maps of the project site to determine historic sensitivity; (3) the results of a Sacred Lands File (SLF) search by the NAHC and any required outreach to local tribes and individuals; (4) a systematic field inventory of the project site with an emphasis on areas identified as highest/high/moderate sensitivity; and, (5) completion of a report with findings/recommendations including general mitigation measures for any development within the VCIP (see MM CUL-1a) as well as any additional site-specific mitigation measures based on the findings of the research and field inventory completed for the ARA.
- ii) **Additional Mitigation Measures.** Additional mitigation measures applicable to project sites within the Highest/High/Moderate sensitivity areas include the following:
 - (1) If recommended by the Qualified Archaeologist, undertake completion of a presence/absence archaeological testing program prior to construction to determine the subsurface archaeological sensitivity of the project site and the potential for exposing both prehistoric and historic subsurface cultural materials during future ground disturbing construction.
 - (2) If recommended by the Qualified Archaeologist, conduct archaeological and tribal monitoring of ground disturbing construction of the archaeologically sensitive areas within the project site to a maximum depth of 5 feet below existing grade in accordance with the protocols presented in a site specific AMP (see MM CUL-1a (iv)). The Plan Area is generally within Holocene fan and basin deposits that coincide with the human occupation of central California. Excavations 5 feet or deeper would generally be in older Pleistocene deposits that do not include human occupation

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of the Plan Area. In the event of an unexpected discovery below 5 feet of the existing ground surface, implement the measures specified in MM CUL-1 (a)(iv).

If an AMP is required, then it shall be developed and approved by the approving agency prior to the start of construction to avoid delays during construction by allowing immediate implementation of the AMP after an unexpected discovery of significant cultural materials that may require archaeological and tribal monitoring.

- (3) If recommended by the Qualified Archaeologist, conduct tribal monitoring during decommissioning of the facility in accordance with the approved AMP to a maximum depth of 5 feet below original ground surface.
- (4) If recommended by the Qualified Archaeologist, develop an ATP with protocols to be implemented in the event that data recovery is the preferred action to recover significant historical or unique archaeological resources (or tribal cultural resources) exposed during ground disturbing construction. If an ATP is required, then it shall be prepared by the Qualified Archaeologist, in consultation with the Tribe and project proponent, and approved by the approving agency prior to the start of construction to avoid delays during construction by allowing immediate implementation of the ATP after an unexpected discovery of cultural materials that may require data recovery.

- c. **Mitigation Measures Applicable to VCIP Development in Low/Lowest Sensitivity Areas.** Implement MM CUL-1a. Measures Applicable to All VCIP Development. No additional mitigation for these areas is required.

Significance After Mitigation: *Less-than-significant impact.* Application of Mitigation Measure CUL-1 during construction and decommissioning of VCIP energy resource and infrastructure projects would reduce potential impacts to cultural resources to *less than significant*.

Impact CUL-2. Potential Disturbance to Buried Native American Ancestral Remains

Implementation of the VCIP Energy Resource and Infrastructure Plans could have potentially adverse impacts on any buried ancestral remains which may be present within the Plan Area. (*Less-than-Significant Impact with Mitigation*)

According to the cultural resources report by Basin Research Associates, no human burials have been recorded within the Plan Area or immediate vicinity. The majority of the lands in the Plan Area have been disturbed by agricultural activities. However, it is possible that previously undiscovered human remains could be buried within the Plan Area. Previously unknown Native American human remains could be exposed during ground disturbing construction operations associated with grading, roadway, utility, and/or drainage improvements and/or other development within the Plan Area. Construction operations could result in the inadvertent exposure and disturbance of buried prehistoric or protohistoric (ethnographic) Native American human remains. This potential impact would be reduced to *less than significant* through implementation of Mitigation Measure CUL-2 below.

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Mitigation Measure CUL-2: Protection of Native American Ancestral Remains

To reduce potential impacts to Native American ancestral remains from VCIP implementation, the following mitigation measures are applicable at the project-specific level:

- a) Pursuant to Health and Safety Code section 7050.5(b) and PRC, 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 Fresno County Coroner shall be notified immediately. If the remains are determined to be Native American, the Coroner shall notify the NAHC, who shall identify the person believed to be the Most Likely Descendant (MLD). The project proponent and MLD, with the assistance of the Qualified 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, section 15064.5(e)). The agreed upon treatment plan shall address the appropriate excavation, removal, recordation, analysis, custodianship, curation, and final disposition of the human remains and associated or unassociated funerary objects. PRC, section 5097.98(a) allows up to 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 PRC, 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 human remains with appropriate dignity on the property in a location not subject to further and future subsurface disturbance."
- b) The treatment plan shall be implemented, and any findings shall be submitted by the Qualified Archaeologist in a professional report to the project proponent, the appropriate regulatory agency, the MLD and the Tachi Yokut Tribe, and the CHRIS/SSJVIC.

Significance After Mitigation: **Less-than-significant impact.** Application of Mitigation Measure CUL-2 during construction and decommissioning of VCIP energy resource and infrastructure projects would reduce potential impacts to Native American ancestral remains to *less than significant*.

Impact CUL-3. Potential Impacts to Tribal Cultural Resources

Implementation of the VCIP Energy Resource and Infrastructure Plans could have potentially adverse impacts on any tribal cultural resources which may be present within the Plan Area. (*Less-than-Significant Impact with Mitigation*)

Pursuant to PRC, section 21074, a tribal cultural resource is defined as either a site, feature, place, cultural landscape, sacred place, or object with cultural value to a California Native American tribe that is geographically defined in terms of the size and scope of the landscape, and that is: i) Listed or eligible for listing in the CRHR, or in a local register of historical resources as defined in PRC, section 5020.1(k); or 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 PRC, section 5024.1. In applying the criteria set forth in {00081424.1}

subdivision (c) of PRC, section 5024.1, the lead agency shall consider the significance of the resource to a California Native American Tribe.

To date, no NRHP or CRHR eligible or listed prehistoric cultural resources, or known ethnographic, traditional or contemporary Native American use areas and/or other features of cultural significance have been identified in or adjacent to the Plan Area. In accordance with AB 52, the District is engaged in ongoing consultation with the Santa Rosa Rancheria Tachi Yokut Tribe which is the tribe that is traditionally and culturally affiliated with the Plan Area. The tribal representatives who were contacted regarding the VCIP indicated that “[t]he Fresno Slough is an important geographic and hydrographic point for the Yokut. It is the area that connects the Northern and Southern Valley Yokut.” (The current alignment of Fresno Slough runs parallel to the eastern Plan Area boundary at a distance ranging from approximately 3 to 7 miles from the Plan Area, although the eastern margins of the Plan Area have a high sensitivity for archaeological resources due to proximity to Fresno Slough.) (See Figures 4.5-1 and 4.5-2.) With the implementation of Mitigation Measures CUL-1 and CUL-2, the impact to tribal cultural resources would be reduced to *less than significant*.

Mitigation Measure CUL-3: Implement MM CUL-1 (Protection of Cultural Resources) and MM CUL-2 (Protection of Native American Ancestral Remains).

Significance After Mitigation: **Less-than-significant impact.** Application of Mitigation Measures CUL-1 and CUL-2 during construction and decommissioning of VCIP energy resource and infrastructure projects would reduce potential impacts to tribal cultural resources to *less than significant*.

4.5.3.2. TRANSMISSION CORRIDORS OUTSIDE THE VCIP

The transmission corridors for delivery of solar generation from potential VCIP projects to urban electricity markets in northern and southern California have been identified at a conceptual level in this PEIR to allow a general discussion of environmental impacts associated with transmission line development in these corridors for informational purposes. These transmission delivery corridors extend far beyond the District’s boundaries and are not part of the proposed VCIP. The planning and approval of these outside transmission lines are under the jurisdiction of the state and federal energy regulatory agencies, public utilities, and cities and counties traversed by the transmission lines. The following discussion provides an overview of potential impacts of the outside transmission lines upon cultural and tribal cultural resources.

The delivery transmission lines extending outside the Plan Area would have a total corridor length of approximately 348 miles and would traverse 10 counties en route to the regional load centers in northern, central, and southern California. The archaeological sensitivity along the transmission routes varies according to the same factors described for the Plan Area. The higher sensitivity areas are found in proximity to water bodies, while lower archaeological sensitivity is characteristic of higher elevation terrain and valley areas that are remote from water sources.

The northern transmission corridor would extend along the western edge of the San Joaquin Valley from Fresno to Alameda counties. The terrain along the northern transmission route consists primarily of flat land on

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the valley floor at the north and south ends of the corridor, and mountainous terrain for most of its length along the west side of I-5. Numerous ephemeral streams emerge from the foothills and enter the valley floor along the transmission route. The areas with highest archaeological sensitivity occur along the water courses, and the lowest sensitivity areas are in the higher elevations above the valley floor. A number of cultural resources have been previously recorded in the vicinity of the corridor, most of which consist of historic-era features such as water conveyances, transportation infrastructure, and a ranch complex (WAPA 2015).

The western transmission corridor would extend westward over the Coast Ranges through San Benito and Monterey counties to Moss Landing on Monterey Bay. The corridor is characterized by alternating mountain ranges and interior valleys, with a transition to coastal plain near Monterey Bay. The archaeological sensitivity is highest in the interior valleys and the coastal plain and lowest in the higher elevation mountainous terrain (Monterey Co. 2010, San Benito Co. 2015).

The southern transmission route would extend southward on the San Joaquin Valley floor until reaching the Tehachapi Range southeast of Bakersfield. The transmission route would then run southeastward over the mountains before descending to the Antelope Valley en route to the Vincent Substation near Acton. The archaeological sensitivity along the valley floor segments is generally high due to prehistoric availability of food sources around the string of water features that existed along the west side of the valley including Tulare Lake, Buena Vista Lake, and their connecting waterways. The Tehachapis have generally low sensitivity given the terrain elevations and scarcity of water features. The archaeological sensitivity of the Antelope Valley is generally moderate with higher sensitivity along ephemeral streams (Far Western 2003).

The outside transmission corridors would pass through areas with high archaeological sensitivity, which would be subject to potentially significant impacts due to construction and operation of the transmission lines. As part of the approval and environmental review processes for each transmission project, requirements for comprehensive cultural resource assessments and mitigation measures would apply, similar to those specified above in MMs CUL-1 through CUL-3. If significant or unique prehistoric or historic resources are discovered during the course of pedestrian surveys or during construction, then recordation, recovery and curation measures would be required to be implemented, similar to those set forth in MMs CUL-1 through CUL-3.

Regarding tribal cultural resources, the governing regulatory agencies for each transmission project would be required to undertake consultation with the culturally affiliated tribe in each region, as required under AB 52. The affected tribes would be given the opportunity to identify important tribal cultural resources and recommend mitigation measures applicable to each transmission project.

4.5.3.3. CUMULATIVE IMPACTS

The study area for cumulative cultural resources impacts consists of the Plan Area and immediately surrounding lands. The completed, approved, and pending projects (aka “cumulative projects”) located within the study area are listed in Table 4.0-2 and shown in Figure 4.0-1.

As described in Section 4.5.1. *Environmental Setting*, a total of 31 prehistoric resources have been recorded in the Plan Area, including nine prehistoric sites and 22 prehistoric isolates (i.e., isolated artifact). The prehistoric sites {00081424.1}

include five lithic scatters and four occupation sites. There are 75 recorded historic resources within the Plan Area including 17 historic archaeological sites, 11 isolated historic finds, and 47 built environment resources. (For detailed descriptions, see Section 4.5.1. *Environmental Setting*.)

Construction activity associated with cumulative development, including potential VCIP projects, could result in significant impacts to previously undiscovered historical and archaeological resources that may be present in and around the Plan Area. The archaeological sensitivity mapping developed for the Plan Area, as presented in Figures 4.5-1 and 4.5-2, suggests a generally low measure of risk for exposing surface and/or buried prehistoric archaeological materials during development. The sensitivity maps indicate that both surface and subsurface prehistoric archaeological resources are most likely to be located along the western VCIP boundary where streams exit the foothills and terminate in the valley floor, and also in the eastern portion of the study area along Fresno Slough and the San Joaquin River. These areas are mapped as Highest/High/Moderate sensitivity zones, while most of the valley floor portions of the study area are in the Low/Lowest sensitivity zones (see Figures 4.5-1 and 4.5-2). Historic archaeological resources are more likely to be present at or in the near vicinity of former settlements associated with ranching and agricultural activities as well as oil extraction activities, and transmission and transportation networks including trails, roads and freeways, water conveyance facilities and energy transmission and related infrastructure.

Both surface and subsurface construction disturbance could result in the loss of integrity of cultural data important to the prehistory and history of the San Joaquin Valley. It is also possible that Native American ancestral remains could be encountered as at least two prehistoric villages have been recorded within the Plan Area. It is expected that any potential impacts to cultural and tribal cultural resources associated with the development of the cumulative projects would be mitigated by implementation of mitigation measures similar to those set forth in MM CUL-1 through CUL-3, as such mitigations would be required by the applicable regulatory agencies in conjunction with site development.

With respect to tribal cultural resources, the governing regulatory agencies for each cumulative project would be required to undertake consultation with the culturally affiliated tribe, as required under AB 52. The affected tribe(s) would be given the opportunity to identify important tribal cultural resources and recommend mitigation measures applicable to each cumulative project.

Regarding the outside transmission corridors, it was noted above that all three corridors pass through areas with high archaeological sensitivity which would be subject to potential impacts due to construction and operation of the transmission lines. As part of the approval and environmental review processes for each transmission project, requirements for comprehensive cultural resource assessments and mitigation measures would apply, similar to those specified above in MMs CUL-1 through CUL-3.

The potential impacts related to cultural and tribal cultural resources associated with implementation of the VCIP Energy Resource and Infrastructure Plans would be less than significant with mitigation. Potential impacts related to any potential cultural and tribal cultural resources associated with other cumulative projects would be less than significant with mitigation, such that the cumulative impact would be less than significant. In sum, the potential VCIP clean energy and infrastructure projects would *not make a considerable contribution to a cumulative impact with implementation of the mitigation measures identified above*, and as such the cumulative impact associated with VCIP implementation would be *less than significant*.

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4.5.4. References – Cultural and Tribal Cultural Resources

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- Far Western 2003 Far Western Anthropological Research Group, Inc. December 2004. A *Geoarchaeological Study and Sensitivity Model for the Southern Santa Clara Valley, Hollister, and San Juan Valleys, Sant Clara and San Benito Counties, California*. https://www.academia.edu/24692670/A_Geoarchaeological_Study_and_Sensitivity_Model_for_the_Santa_Clara_Valley_California_2004.
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- WAPA 2015 Western Area Power Administration (WAPA). July 2015. *Draft EIS/EIR – San Luis Transmission Project*. <https://www.wapa.gov/about-wapa/regions/sn/environment/san-luis-transmission-project/>

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4.6. ENERGY

This section includes the following discussion and analysis related to energy: existing environmental and regulatory setting; criteria and methodology for evaluating impacts; and the results of the impact assessment, including identification of potentially significant impacts and corresponding mitigation measures to avoid or substantially lessen such impacts to the extent feasible.

PEIR Scoping Comments

During the PEIR scoping process, the District received one letter containing a comment related to energy. The comment submitted is quoted below (see PEIR Scoping Report in Appendix A of this document).

Leadership Counsel for Justice and Accountability

“The EIR must evaluate the energy use for the construction and long-term operations and maintenance of projects in the VCIP. If analysis of the projects’ energy use reveals that the project may result in significant environmental effects due to wasteful, inefficient, or unnecessary use of energy, or wasteful use of energy resources, the EIR must include mitigation for that energy use. This analysis must include the project’s energy use for all project phases and components, including transportation-related energy, during construction and operation. Possible mitigation measures include energy bill discounts and community microgrids to protect residents from impact of additional load on the grid and ensuring residents who live near the projects receive some of the benefits.”

[Note: The analysis of energy impacts is contained in Section 4.6.3. *Environmental Impact Analysis* under Impacts EN-1 and EN-2]

4.6.1. ENVIRONMENTAL SETTING

The primary energy sources utilized during construction, operation, and decommissioning of the potential VCIP energy and infrastructure projects would be gasoline and diesel fuel. The projects would not use natural gas. Small amounts of electricity would be used for auxiliary power during construction, operation, and decommissioning and for O&M power during operation of the facilities.

Electricity

The VCIP Plan Area lies entirely within the service area of Pacific Gas and Electric Company (PG&E), whose territory covers most of northern and central California. In 2023, the total electricity consumed in Fresno County was 8,384 gigawatt-hours (GWh), which was 10.8 percent of the total PG&E usage of 77,887 GWh (CEC 2024f). In 2023, the power mix of electricity delivered to PG&E customers consisted of 33 percent qualifying renewables (e.g., solar, wind, biomass, geothermal, small hydro), 14 percent large hydro, 53 percent nuclear, and 0 percent natural gas or other fossil fuel (PG&E 2024).

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Transportation Fuels

In 2023, the total quantity of transportation fuels consumed in Fresno County was approximately 372 million gallons of gasoline and 81 million gallons of diesel, representing 2.7 percent and 3.5 percent, respectively, of the statewide totals (CEC 2024a).

Relatedly, Fresno County has a long history of oil and natural gas production, particularly in the oil and gas fields on the west side of the valley near Coalinga. In October 2024, the County produced a total of 176,550 barrels of oil, or 2.7 percent of the state's total production; and approximately 24,994 million cubic feet of natural gas, equivalent to 0.2 percent of statewide production for the same month (Drilling Edge 2024). In 2024, over 76 percent of petroleum delivered to California refineries came from sources outside the state (CEC 2025a). Approximately 44 percent of crude oil in the U.S. is used to produce gasoline and other transportation fuels (U.S. EIA 2025). (For additional discussion on oil and natural gas resources in Fresno County see Section 4.12. *Mineral Resources* in this PEIR.)

Renewable Energy

Since the first utility-scale solar projects in Fresno County were completed in 2008, more than 22 utility-scale solar PV facilities, with a combined generating capacity of 1,623 megawatts (MW) have come online in the County, compared to a statewide total of approximately 13,957 MW generated by solar PV facilities. Currently, there are no existing or proposed solar thermal facilities or utility-scale wind farms in Fresno County. In 2023, Fresno County's solar PV plants generated a total of 2,120,532 megawatt-hours (MWh) of electric power, which was equivalent to 25.3 percent of Fresno County's total electricity consumption in 2022, and represented 5.6 percent of the state's total solar generation of 39,420 GWh in 2023 (CEC 2024c, 2024e, 2024f).

Most of the operating solar facilities in Fresno County have a generating capacity of 50 MW or less, with the largest facility (Scarlet Solar) generating 400 MW. The current pipeline of pending and approved solar projects in Fresno County includes eight solar projects with a combined generating capacity of approximately 2,535 MW, representing an average generating capacity of 316 MW per facility (Fresno County 2025, CEC 2024d). In addition, the County has three approved stand-alone Battery Energy Storage System (BESS) projects, with a total planned storage capacity of 3,045 MW. The larger pending solar projects noted above also include BESS, which will enable the storage of solar power generated during daylight hours to be dispatched to the grid during peak evening hours. For example, on September 6, 2022, a day when many daily temperature records were exceeded, operational BESS throughout the state proved critical to the reliability of the state electrical grid as peak statewide demand reached an all-time high of 52,061 GW at around 5 PM (Cal ISO 2024).

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4.6.2. REGULATORY CONTEXT

Federal

Energy Policy and Conservation Act

In 1975, the federal Energy Policy and Conservation Act established the first Corporate Average Fuel Economy (CAFE) standards to reduce energy consumption by increasing the fuel economy of cars and light trucks (42 U.S.C., section 6201 *et seq.*). The U.S. Congress specified that CAFE standards must be set at the “maximum feasible level” with consideration given for: (1) technological feasibility; (2) economic practicality; (3) effect of other standards on fuel economy; and (4) need for the nation to conserve energy.

Energy Policy Act of 2005

Passed by Congress in July 2005, the Energy Policy Act sets equipment energy efficiency standards and seeks to reduce reliance on nonrenewable energy resources and provides incentives to reduce current demand on these resources (42 U.S.C., section 15801 *et seq.*). Under the act, consumers and businesses can obtain federal tax credits for purchasing fuel-efficient appliances and products, including hybrid vehicles; and constructing energy-efficient buildings. The act also includes incentives for renewable energy production, including solar power.

Energy Independence and Security Act of 2007

Signed into law in December 2007, this broad energy bill most notably included an increase in auto mileage standards, and addressed biofuels, conservation measures, and building efficiency (42 U.S.C., section 17001 *et seq.*). The bill amended the CAFE standards to mandate significant improvements in fleetwide fuel efficiency. The bill also established a new energy block grant program for use by local governments in implementing energy-efficiency initiatives, as well as a variety of green building incentives and programs, among other things.

State of California

California Energy Action Plan

In 2003, the three key energy agencies in California – the California Public Utilities Commission (CPUC), the California Energy Commission (CEC), and the California Power Authority (CPA) jointly adopted an “Energy Action Plan” (EAP) that established goals for California’s energy future and set forth a commitment to achieve these goals through specific actions (CPUC 2003). Revised and updated in 2005 and 2008, the EAP identifies priorities for meeting the state’s energy needs, including energy efficiency and greater reliance on renewable sources of power (CPUC 2008).

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State of California Integrated Energy Policy

Public Resources Code section 25301(a) requires the CEC to develop an integrated energy plan at least every two years for electricity, natural gas, and transportation fuels. The plan calls for the state to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. Every two years, the CEC issues an Integrated Energy Policy Report (IEPR) which provides assessments of progress for greenhouse gas (GHG) reduction and energy efficiency in all sectors and makes recommendations for improvements. The CEC's 2023 IEPR covers a broad range of topics, including: accelerating connection of clean resources to the grid; potential growth of renewable hydrogen; and industrial decarbonization (CEC 2024b).

California Greenhouse Gas Bill (AB 1493)

The "California Greenhouse Gas Bill" (AB 1493 Pavley), signed into law in July 2002, required the California Air Resources Board (CARB) to develop and adopt regulations that achieve maximum feasible reduction of GHGs emitted by passenger vehicles and light-duty trucks (Health and Safety Code, sections 42823, 43018.5). In response, CARB adopted landmark regulations in 2004 limiting GHG emissions from new vehicles sold in California beginning in the 2009 model year. New vehicles complying with this regulation consume nearly 30 percent less fuel than vehicles built before 2009.

California Global Warming Solutions Act (AB 32)

Energy consumption is closely related to GHG emissions, so reductions in overall energy consumption, particularly from non-renewable sources, also reduce GHG emissions. To mitigate the consequences of climate change, the California Legislature (Legislature) enacted the California Global Warming Solutions Act (AB 32) in 2006. AB 32 established a state goal of reducing GHG emissions to 1990 levels by 2020 (a reduction of approximately 25 percent from forecast emissions levels), and required CARB to establish a comprehensive program to implement this goal (Scoping Plan). In 2016, the Legislature passed SB 32 which extended the goals of AB 32 and set a 2030 goal of reducing 2030 emissions by 40 percent from 2020 levels. In 2022, the Legislature passed AB 1279, which establishes the policy of the state to achieve carbon neutrality 2045, and to ensure that GHG emissions by that year are reduced at least 85 percent below 1990 levels. The AB 32 Scoping Plan has gone through four iterations as legislative mandates have evolved, with the latest being the 2022 Scoping Plan which provides the framework for achieving carbon neutrality by 2045, and which identifies policies and strategies that enable carbon dioxide (CO₂) removal solutions and carbon capture, utilization, and storage (CCUS) technologies (CARB 2022b).

Renewables Portfolio Standard (RPS)

One of the key implementation programs under AB 32 is the Renewables Portfolio Standard (RPS) which has undergone several iterations mandating that renewable generation sources comprise an ever-increasing share of electrical utilities' total power generation by certain target dates. Qualifying renewable generation sources include solar, wind, small hydro, geothermal, and biomass. In September 2018, Governor Brown signed SB 100, which increased the required renewables content of electricity generation to 50 percent by 2025 and 60 percent by 2030, which put California on the path to implement a zero-carbon electricity grid by 2045. In September 2022, these targets were revised by SB 1020, which requires the following: 90 percent renewables or zero carbon content of all electricity sales in California by the end of 2035; 95 percent renewables content of electricity by 2040; and 100 percent renewables content of electricity consumed by state agencies by the

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end of 2035. SB 1020 also codifies the goal stated in SB 100 of achieving 100 percent renewables content by 2045.

As of 2023, renewable energy sources, including biomass, geothermal, small-scale hydro, solar, and wind, accounted for an estimated 35.5 percent of California’s power mix, with utility-scale solar generation accounting for 18.3 percent of the State’s power mix. During the same year, fossil fuel energy sources – primarily natural gas with minor quantities of coal and oil – accounted for an estimated 43.8 percent of the state’s power mix (CEC 2024a). In light of the discussion regarding AB 2661 (2024) below, it is anticipated that implementation of renewable energy projects under the VCIP would reduce reliance on fossil fuels for electricity generation.

Electricity: Westlands Water District (AB 2661)

In recognition of “the unique need of the Westlands Water District to support the development of solar electrical generation for the electrical grid and to facilitate the development of transmission capacity to help California reach its clean energy and climate goals,” the Legislature enacted AB 2661 in 2024. The act, among other things, authorizes the District to: (1) provide, generate, and deliver solar photovoltaic electricity, and construct, operate, and maintain any and all works, facilities, improvements, and property, or portions thereof, necessary or convenient for generating and delivering that electricity; (2) construct, operate, and maintain an energy storage system, as defined in section 2835 of the Public Utilities Code, and all works, facilities, improvements, and property, or portions thereof, necessary or convenient for the operation of an energy storage system, within the boundaries of the District; and (3) construct, operate, and maintain electrical transmission lines and all works, facilities, improvements, and property, or portions thereof, necessary or convenient for the conveyance of electricity within the boundaries of the District (Wat. Code, section 37860(b)-(d)).

Low Carbon Fuel Standard

The Low Carbon Fuel Standard (LCFS), established in 2007 by Executive Order S-1-07 and administered by CARB, requires producers of petroleum-based fuels to reduce the carbon intensity of their products, starting with a 0.25-percent reduction in 2011 and culminating in a 10-percent reduction by 2020. Petroleum importers, refiners, and wholesalers can either develop their own low carbon fuel products, or buy LCFS credits from other companies that develop and sell low carbon alternative fuels, such as biofuels, electricity, natural gas, and hydrogen.

Executive Order N-79-20

EO N-79-20 (September 23, 2020) sets the following goals for the state: 100 percent of in-state sales of new passenger cars and trucks shall be zero-emission by 2035; 100 percent of medium and heavy duty vehicles in the state shall be zero-emission by 2045 for all operations where feasible and by 2035 for drayage trucks; and 100 percent of off-road vehicles and equipment in the state shall be zero-emission by 2035, where feasible.

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California Air Resources Board (CARB)

CARB is the state air pollution control agency charged with protecting the public from the harmful effects of air pollution and developing programs and actions to fight climate change.

Advanced Clean Cars Program

Closely associated with the Pavley regulations under AB 1493 (2002), the Advanced Clean Cars emissions-control program was approved by CARB in 2012. The program combines the control of smog, soot, and GHGs with requirements for greater numbers of zero-emissions vehicles for model years 2015-2025. The components of the Advanced Clean Cars program include the Low-Emission Vehicle (LEV) regulations that reduce criteria pollutants and GHG emissions from light- and medium-duty vehicles, and the Zero-Emission Vehicle (ZEV) regulation, which requires manufacturers to produce an increasing number of pure ZEVs (meaning battery electric and fuel cell electric vehicles), with provisions to also produce plug-in hybrid electric vehicles (PHEV) in the 2018 through 2025 model years (CARB 2025c). A related program is the Advanced Clean Fleets Program which requires fleets that are well suited for electrification to reduce emissions through requirements to both phase-in the use of Zero-Emission Vehicles (ZEVs) for targeted fleets and requirements that manufacturers only manufacture ZEV trucks starting in the 2036 model year (CARB 2025d).

Airborne Toxic Control Measures to Limit Diesel-Fueled Commercial Motor Vehicle Idling

This regulation was adopted to reduce public exposure to diesel particulate matter and other air contaminants by limiting the idling of diesel-fueled commercial motor vehicles. It applies to diesel-fueled commercial vehicles over 10,000 pounds that are licensed for operation on highways. Reducing idling of diesel fueled commercial vehicles reduces the amount of petroleum-based fuel used by the vehicle (CARB 2025e).

Regulation to Reduce Emissions of Diesel Particulate Matter, Oxides of Nitrogen and other Criteria Pollutants, from In-Use Heavy-Duty Diesel-Fueled Vehicles

This regulation was adopted to reduce emissions of pollutants from in-use diesel-fueled vehicles (Title 13, California Code of Regulations (CCR), section 2025). The regulation, phased in from 2011 through 2023, is intended to reduce emissions by requiring the installation of diesel soot filters and encouraging the retirement, replacement, or repowering of older, dirtier engines with newer emissions-controlled models. The emission-controlled vehicles would use petroleum-based fuel in a more efficient manner.

California Building Standards Code (Title 24)***California Building Energy Efficiency Standards Code***

The California Building Energy Efficiency Standards for Residential and Nonresidential Buildings (24 CCR, part 6) provides energy conservation standards for all new and renovated commercial and residential buildings constructed in California. The standards apply to the building envelope (building enclosure or exterior), space-conditioning systems, water-heating and lighting systems of buildings and appliances, and provide guidance on construction techniques to maximize energy conservation. Minimum efficiency standards are given for a variety of building elements including appliances, water and space heating and cooling equipment, and insulation for doors, pipes, walls and ceilings.

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California Green Building Standards Code

The California Green Building Standards Code, commonly referred to as the CALGreen Code (24 CCR, part 11), was first adopted in 2009 to meet the goals of AB 32, and is updated every three years. The code sets targets for energy efficiency, water consumption, dual plumbing systems for potable and recyclable water, diversion of construction waste from landfills and use of environmentally sensitive materials in construction and design, including eco-friendly flooring, carpeting, paint, coatings, thermal insulation and acoustical wall and ceiling panels. The code also includes requirements for bicycle parking and designated parking for fuel-efficient and carpool/vanpool vehicles in commercial development. The latest CALGreen standards were updated by the California Energy Commission in the 2022 CALGreen Code, which took effect on January 1, 2023 (CBSC 2023).

A key feature of the CALGreen Code applicable to VCIP projects is the requirement for diversion of 65 percent of non-hazardous construction waste from landfills (see Section 4.17. *Utilities and Service Systems* for additional information).

Fresno County

Fresno County General Plan

The Fresno County General Plan (General Plan) does not contain any goals and policies related to energy which are relevant to the VCIP (Fresno Co. 2024b). However, the implementation of General Plan policies related to greenhouse gas emissions (see Section 4.8.2. *Greenhouse Gas Emissions*), and air quality (see Section 4.3. *Air Quality*) would indirectly result in reductions in energy consumption.

4.6.3. ENVIRONMENTAL IMPACT ANALYSIS

METHODOLOGY

This section analyzes the potential for the implementation of VCIP to result in significant environmental impacts related to energy. Specifically, it evaluates whether implementation of the VCIP would result in a substantial increase in energy demand and/or wasteful use of energy during the construction, operation and maintenance, and decommissioning of the VCIP energy and infrastructure projects, considering the off-setting effects of the VCIP projects' solar production of a clean energy source compared with conventional fossil-fueled electrical generation. The following evaluation is based on the GHG emissions estimates for the VCIP prepared by Illingworth & Rodkin (Appendix B of this document).

SIGNIFICANCE CRITERIA

Based on Appendix G of the state CEQA Guidelines, the project would be considered to result in a significant impact related to energy if it would:

- a. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.
- b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

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4.6.3.1. DIRECT AND INDIRECT EFFECTS

Impact EN-1. Wasteful, Inefficient, or Unnecessary Consumption of Energy

Implementation of the VCIP Energy Resource and Infrastructure Plans would not result in potentially significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy, during project construction or operation. (*Less-than-Significant Impact*)

Construction

Construction of the VCIP energy and infrastructure projects would involve short-term consumption of fuels for construction equipment, material truck deliveries, and vehicle trips generated by construction workers traveling to and from the project sites. As required by the CALGreen Code, 65 percent of construction and demolition waste would be diverted from the waste stream, allowing for reuse of these materials and thus saving energy that would otherwise be consumed in extraction, transport and processing of virgin materials (CSBC 2023).

The primary form of energy used during construction would be petroleum-based fuels, primarily diesel. Natural gas would not be used during construction-related activities, and the relatively small amounts of electricity used for power tools and lighting construction would not result in wasteful or unnecessary electricity demands. Fuel consumption by equipment during construction-related activities was estimated based on construction carbon dioxide equivalent (CO₂e) emissions measured in metric tons (MT) calculated from California Emissions Estimator Model (CalEEMod) outputs from the air quality analysis and converted to diesel. The results are shown in Table 4.6-1.

TABLE 4.6-1
VCIP – ENERGY CONSUMPTION AND PRODUCTION

Project Phase	Energy Consumption			Energy Production		Fuel Consumption as % of Solar Energy Production
	MT CO ₂ e	Fuel Equivalent ¹ (gallons)	MBtu Equivalent ²	MWh	MBtu Equivalent ³	
Construction (total)	968,593	950,480,311	130,595,995	33,484,500/yr ⁴	1,142,491,140/yr	11.4%
Operation (annual)	4,269	4,189,170	575,592			0.05%
Operation (35 years)	149,415	146,620,950	20,145,720			0.18%
Decommissioning (total)	968,593	950,480,311	130,595,995			11.4%
Project Lifetime (construction, operation, decommissioning,)	2,086,601	2,047,581,572	281,337,710	1,171,957,500 (35 years)	39,987,189,900 (35 years)	0.70%

Conversion Factors

1. GHG to Fuel: 10.19 kgCO₂e/gal diesel = 0.9813 gal/kgCO₂e X 1,000 kg/MT = 981.3 gal/MT CO₂e
 2. Fuel to Energy: 137,381 Btu/gal / 1,000 Btu/MBtu = 0.1374 MBtu/gal
 3. Energy to Electricity: 3,412 Btu/kWh x 1,000 Btu/MWh / 1,000,000 Btu/MBtu = 34.12 MBtu/MWh
 4. Based on the 2023 average generation of 1,594.5 MWh/MW from the five largest solar operating solar facilities in Fresno County (CEC 2024f).
- Sources: Illingworth & Rodkin 2025; US EIA 2024a; US EIA 2024b.

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As shown in Table 4.6-1, the total fuel consumption during all phases of on-site and off-site vehicle and equipment usage during construction for the VCIP energy and infrastructure projects is estimated to be approximately 950.5 million gallons, consisting primarily of diesel fuel. Gasoline will likely comprise a minor portion of the overall fuel consumption, mainly for use in passenger vehicles by commuting construction workers. Although it is unknown exactly how much gasoline would be consumed relative to diesel fuel, gasoline is about 14 percent less carbon-intensive than diesel fuel (i.e., one gallon of diesel emits as much GHG as 1.14 gallons of gasoline) (US EIA 2024b). Therefore, the above fuel consumption estimate for project construction is likely greater than would occur during full buildout of the VCIP and represents the upper limit of reasonably foreseeable conditions.

The construction fuel consumption total was converted to British Thermal Units (Btu) to allow comparison with VCIP solar energy production, which was converted from MWh/yr to Btus. As shown in Table 4.6-1, the total energy consumed in VCIP project construction over approximately 10 years would be equivalent to about 11.4 percent of one (1) year's electricity production at the VCIP solar facilities under full operation. As also shown, the total lifetime energy use of the VCIP solar and infrastructure facilities (including construction, decommissioning, and 35 years of operation) is equivalent to approximately 0.70 percent of total energy production over the project's useful life. Thus, the overall energy efficiency of the VCIP energy and infrastructure projects would be approximately 99.3 percent over the lifetime of the VCIP projects. In comparison, the energy efficiency of the most efficient combined-cycle natural gas fueled power plant in California is approximately 47 percent, which means that 53 percent of the energy input in the form of natural gas is wasted during electricity generation (CEC 2020, p. 10). However, the 47 percent energy efficiency for natural gas plants does not consider the energy consumed in plant construction or decommissioning. If energy inputs for construction and decommissioning of the solar facility are ignored to allow for a valid comparison, the 0.05 percent annual energy input vs. output for the solar facility would be 940 times more energy efficient than the most efficient natural gas-fueled power plant.

Additionally, the efficiency of fuel use during construction the VCIP projects would be increased through implementation of the San Joaquin Valley Air Pollution Control District's (SJVAPCD) requirement for clean fleet construction equipment to minimize emissions under Rule 9510 regarding indirect source review (ISR) which would also indirectly result in greater fuel efficiency (SJVAPCD 2018). Unnecessary idling of construction equipment and vehicles would be avoided through compliance with California Code of Regulations, title 13, section 2485, which requires that non-essential idling for all diesel-fueled vehicles not exceed 5 minutes at any given location. The energy efficiency of fuel consumed by commuting workers and delivery vehicles would be ensured through federal fuel efficiency standards, and by substantial voluntary carpooling. In addition, construction contractors would be required to provide substantial shuttle bus service for workers to maintain acceptable service levels on area roads and highways (see Section 4.16. *Transportation*). For construction haul trucks, the state's regulation to reduce diesel emissions through replacement of older trucks with newer models with diesel emissions controls would also result in greater fuel efficiency for long-haul trucks such as those delivering imported solar components from California ports. In addition, the project would be constructed in accordance with the California Building Standards Code and Energy Efficiency Standards, as enforced through plan review and site inspections by the Fresno County Building Official. Given that potential VCIP projects would comply with the above rules, regulations, and programs to maximize energy efficiency in vehicles and equipment used in construction, in addition to achieving energy savings from required trip reduction for the commuting work force, project construction would not result in the inefficient, wasteful, or unnecessary use of energy resources.

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Operation

Each VCIP solar and energy storage facility would be operated by a small number of permanent staff who would monitor operations, with periodic visits by maintenance staff who would perform inspections, maintenance and repairs, vegetation management, and panel washing. The infrastructure facilities such as substations, gen-tie lines, and VCIP transmission lines would have no permanent staff and would receive occasional visits by maintenance personnel. Thus, the operation of the VCIP energy and infrastructure facilities would involve relatively small amounts of fuel consumption for staff travel to and from the facilities, and for fueling maintenance vehicles and equipment. Electricity consumption for project lighting and operation would also be low.

Permanent structures such as O&M buildings and substation control buildings would be subject to the energy conservation measures and standards contained in CALGreen and the Energy Efficiency Standards. Examples of energy conservation measures include but are not limited to building insulation; use of energy efficient HVAC; solar-reflective roofing materials; energy efficient indoor and outdoor lighting systems; and incorporation of skylights.

A primary purpose of the proposed VCIP is to facilitate renewable solar energy production and provide for the reduced statewide reliance on non-renewable fossil-fueled generation. While outside the scope of this analysis and the District's control, the substantial quantities of renewable energy produced and stored by the VCIP solar and energy storage facilities would likely allow for the decommissioning of equivalent generation from natural gas fired power plants. As shown in Table 4.6-1, the annual energy consumed by facilities operation would be equivalent to approximately 0.05 percent of annual energy production from VCIP energy projects. In other words, the operating energy efficiency of the VCIP facilities would be about 99.95 percent, which is extremely efficient compared to fossil-fueled power plants, of which even the most efficient plants achieve an energy efficiency of 47 percent. Thus, the consumption of energy by VCIP projects would not be wasteful or inefficient. Such projects would likely result in a substantial offset or displacement of highly inefficient non-renewable fossil fuel generation with highly efficient and renewable solar generation. Therefore, the operation of the VCIP facilities would not result in wasteful, inefficient, or unnecessary use of energy, and the impact to energy resources would be *less than significant*.

Decommissioning

At the end of its useful life after 35 years of operation, each VCIP solar and energy storage facility would be de-energized and decommissioned. The deconstruction process would involve removal of all solar arrays, equipment and pads, battery storage units, substations, electrical cables, fencing, and other material in accordance with an approved Reclamation Plan. Equipment and materials would be reused and/or recycled to the extent practicable. Based on decommissioning plans for other solar projects (including those within or near the Plan Area), it is anticipated that much of the decommissioned material would be salvaged and repurposed or recycled. This would avoid expenditure of energy in manufacturing components from raw materials, and represents substantial energy savings from conservation.

For purposes of estimating energy consumption during decommissioning, it was assumed that the total energy requirements would be similar to those of project construction, as shown in Table 4.6-1. However, decommissioning is expected to involve less equipment use and fewer haul truck trips, and the time required for decommissioning would be less than original construction. In addition, advances in fuel efficiency (and

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anticipated transition to non-fossil fuels for transport trucks and construction equipment) over time would also reduce energy consumption during decommissioning. As such, it is anticipated that the actual amount of energy consumed in decommissioning could be half the energy use estimated for construction or less. In addition, the contractors undertaking the decommissioning would comply with the same or more stringent rules, regulations, and programs to maximize energy efficiency in vehicles and equipment as applies to construction. In summary, the decommissioning of the VCIP energy and infrastructure projects would not result in the inefficient, wasteful, or unnecessary use of energy, and the impact to energy resources would be *less than significant*.

Mitigation Measures: No mitigation is required.

Impact EN-2. Conflict With or Obstruct a State or Local Plan for Renewable Energy or Energy Efficiency

Implementation of the VCIP Energy Resource and Infrastructure Plans would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. The VCIP would instead advance these plans by facilitating new sources of renewable energy. (*Less-than-Significant Impact*)

As discussed in Section 4.6.2. *Regulatory Context*, there are numerous plans, policies, and regulations which directly and indirectly address renewable energy and energy efficiency during construction, operation, and decommissioning of potential VCIP projects. For energy efficiency in building construction, the applicable energy conservation requirements are contained in the California Building Standards Code and Energy Efficiency Standards, which would apply to the construction of buildings and structures within VCIP projects.

The state's primary mandate regarding renewable energy is embodied in AB 32, the Global Warming Solutions Act of 2006, which is implemented through CARB's Scoping Plan. The 2022 Climate Change Scoping Plan adopted by CARB outlines the strategies for achieving the emissions reduction target mandated in AB 32 (CARB 2022). One of the key strategies is the RPS, which now requires all electric utilities in California to include a minimum of 60 percent renewable generation sources in their overall energy mix by 2030, and mandates 100 percent renewables by 2045. The solar generation and energy storage elements of the VCIP would help increase the proportion of renewables in the statewide energy portfolio, thereby furthering implementation of the RPS by the target years instead of obstructing its implementation. As declared by the Legislature in AB 2661 (2024), the activities contemplated by the VCIP underscore "the unique need of the Westlands Water District to support the development of solar electrical generation for the electrical grid and to facilitate the development of transmission capacity to help California reach its clean energy and climate goals." The addition of the VCIP's solar generation and energy storage to the state's electrical supply will help facilitate the retirement of existing older fossil-fueled generation plants, thereby offsetting or displacing those inefficient sources of electricity with highly efficient and renewable sources of electricity. Therefore, the implementation of the VCIP Energy Resource and Infrastructure Plans would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency, and thus would have *no impact* in this regard.

Mitigation Measures: No mitigation is required.

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4.6.3.2. TRANSMISSION CORRIDORS OUTSIDE THE VCIP

The outside transmission lines would result in the consumption of energy in the form of fuel needed for vehicles and equipment used during construction. Additional energy would be required for the manufacture of new materials for the transmission lines. Overall energy consumption during construction would be reduced by compliance with air quality rules and regulations. The efficiency of fuel use during construction of the transmission projects would be increased through the use of clean fleet construction equipment to minimize emissions as required by the SJVAPCD and neighboring air quality management districts. Unnecessary idling of construction equipment and vehicles would be avoided through compliance with the state requirement that non-essential idling for all diesel-fueled vehicles not exceed 5 minutes at any given location (13 CCR, section 2485(c)(1)(B)). For construction haul trucks, the state's regulation to reduce diesel emissions through replacement of older trucks with newer models with diesel emissions controls would also result in greater fuel efficiency for long-haul trucks. The state's Advanced Clean Fleets Program would also facilitate the electrification of the trucking fleet. The energy efficiency of fuel consumed by commuting workers and delivery vehicles would be ensured through federal fuel efficiency standards, and by substantial voluntary carpooling. Given that the transmission projects would comply with applicable rules, regulations, and programs to maximize energy efficiency in vehicles and equipment used in construction, the outside transmission lines would not result in the inefficient, wasteful, or unnecessary use of energy.

The purpose of the outside transmission corridors is to provide the state's major energy markets with access to the VCIP's renewable energy sources, thus reducing the state's dependence on non-renewable generation sources. As such, the outside transmission lines would be instrumental in facilitating displacement of inefficient fossil fuel generation and thus would indirectly result in a substantial net reduction in fossil-based energy consumption as provided by VCIP solar facilities, quantified under Impact EN-1. Therefore, the outside transmission lines would help advance the state's goals of increasing available sources of renewable energy and increasing energy efficiency.

4.6.3.3. CUMULATIVE IMPACTS

Construction and operation of VCIP projects would be subject to an array of regulatory requirements related to the efficient use of fuel, use of renewable energy sources, solid waste reduction and diversion, and energy efficient building standards, among other requirements. These requirements would also apply to the other past, present, and reasonably foreseeable future projects and would ensure that their construction and operation would not result in cumulatively wasteful, inefficient, or unnecessary use of energy. Therefore, the *cumulative energy impact would be less than significant*, and the impact of VCIP implementation would *not be cumulatively considerable*.

As is the case with the potential VCIP projects, an objective of most of the other cumulative projects (i.e., solar projects) is to help implement state and local plans and policies to generate and deliver renewable solar energy to help reduce statewide reliance on non-renewable fossil-fueled generation. The operation of the solar/BESS facilities would likely allow for the decommissioning of equivalent generation from natural gas fired power plants. The cumulative projects would consume a relatively small amount of electricity to operate lights

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and equipment, and this energy consumption would be negligible compared to the clean energy produced by the solar projects and their displacement of inefficient fossil-fueled generation. Therefore, the cumulative projects would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency, and thus the *cumulative energy impact would be less than significant*, and the impact of VCIP implementation would *not be cumulatively considerable*.

4.6.4. REFERENCES – ENERGY

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4.7. GEOLOGY, SOILS and PALEONTOLOGICAL RESOURCES

This section includes the following discussion and analysis related to geology, soils and paleontological resources: existing environmental and regulatory setting; criteria and methodology for evaluating impacts; and results of the impact assessment, including identification of potentially significant impacts and corresponding mitigation measures to avoid or substantially lessen such impacts to the extent feasible, as appropriate. The District received no scoping comments pertaining to geology, soils and paleontological resources (see PEIR Scoping Report in Appendix A of this document). Comments from the California Department of Conservation, Geologic Energy Management Division (CalGEM) regarding construction in proximity to existing oil and gas wells are addressed in Section 4.9. *Hazards and Hazardous Materials*.

The discussion of paleontological resources in the section is based on the “VCIP – Paleontology Memo” prepared by Earthview Science in June 2025. The paleontology memo is kept administratively confidential to avoid public disclosure of potential fossil localities.

4.7.1. Environmental Setting

4.7.1.1. GEOLOGY AND SOILS

Regional Geology

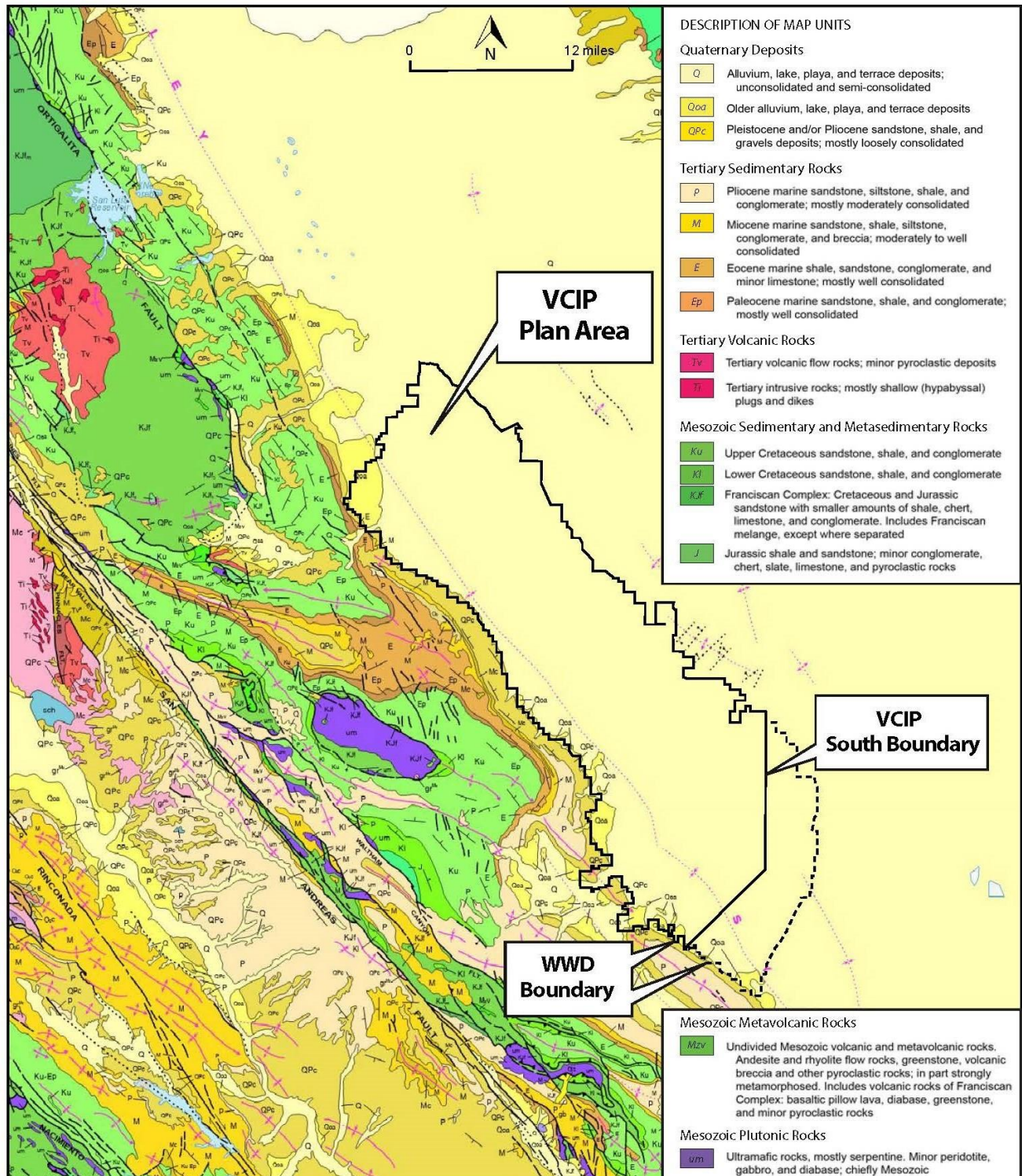
The VCIP Plan Area is in the Great Valley Geomorphic Province, a topographic and structural basin bounded on the east by the Sierra Nevada and on the west by the Coast Ranges. The Sierra Nevada are part of a fault block which dips gently to the southwest and forms the bedrock beneath the valley. This basement complex is composed of igneous and metamorphic rocks of pre-Tertiary age (see Figure 4.7-1). These, in turn, are overlain by Quaternary period alluvium, including older material from the Pleistocene Epoch (Ice Age) (about 2.6 million to 11,700 years ago), which is covered by a layer of more recent material from the Holocene Epoch (about 11,700 years ago to present). Over time, runoff from the adjacent mountain ranges flowed to margins of the San Joaquin Valley where they were deposited to form broad, low semi-conical features termed alluvial or fluvial fans (see Figure 4.7-2). These fans extended radially many miles from the points where the rivers left the steep mountain slopes. The western portions of the Plan Area are located on broad alluvial fans primarily created by sediments carried by Panoche Creek, Cantua Creek, and Arroyo Pasajero from the base of the Diablo Range to the west. The surficial material in the eastern portions of the Plan Area is composed of basin deposits from successive flood events along the low-lying central axis of the valley.

Topography and Physical Features

The Plan Area is characterized by very gradual slopes with ground elevations decreasing from southwest to northeast toward the central low-lying axis of the valley. Ground elevations on the valley floor portions of the Plan Area range from a high of about 500 feet above mean sea level on western border of the Plan Area to a low of about 150 feet elevation at the northeastern edge of the Plan Area near Mendota, reflecting an average downslope gradient of 0.4 percent.

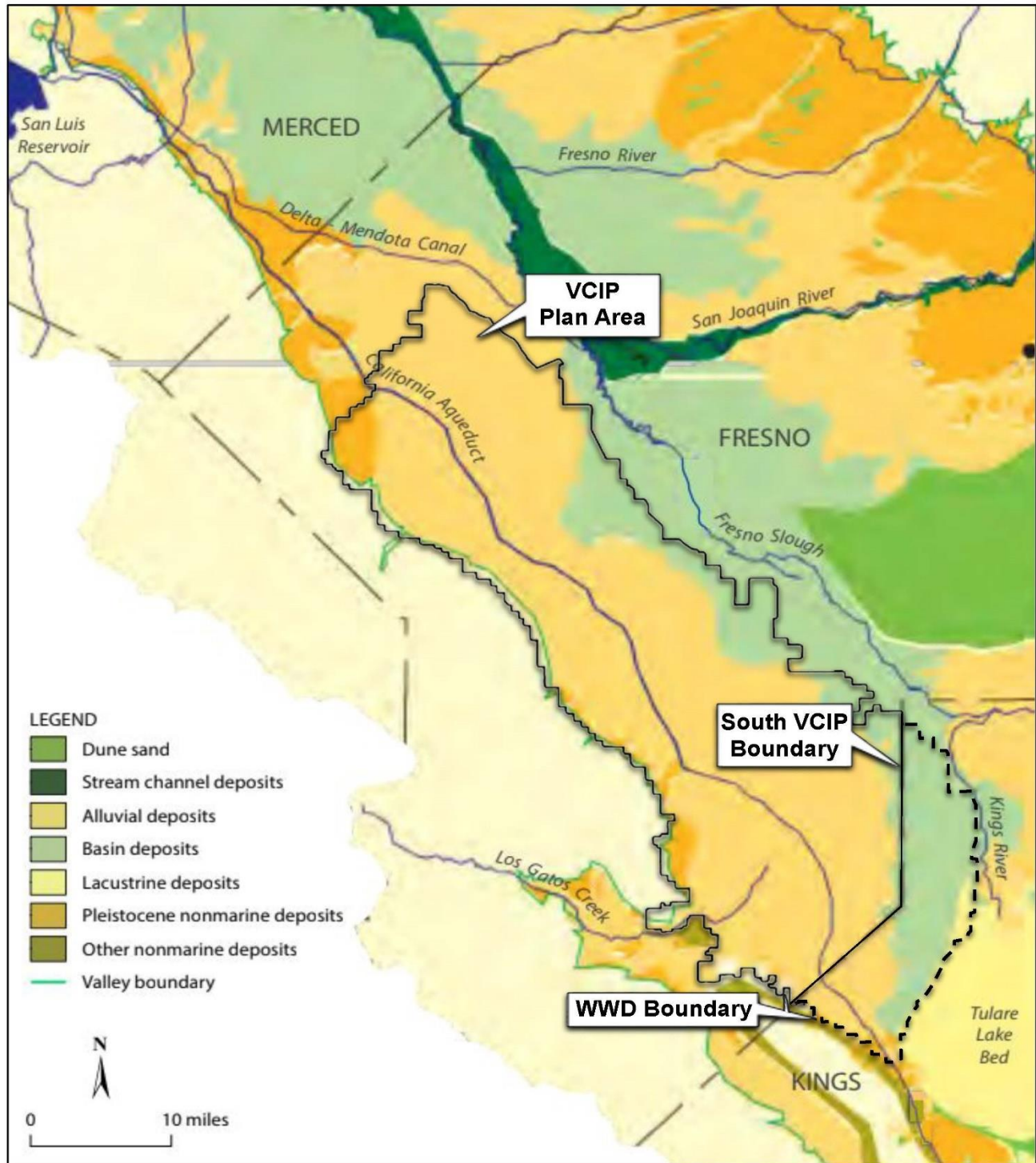
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4. Environmental Impact Analysis
4.7. Geology, Soils and Paleontological Resources



Source: California Geological Survey, 2025

General Geology
Figure 4.7-1



Source: USGS, 1998

Surficial Geology
Figure 4.7-2

Several drainage courses emerge from the Coast Ranges, the most prominent of which include Little Panoche Creek, Panoche Creek, the Cantua Creek System, and the Arroyo Pasajero Stream System. The San Luis Canal/California Aqueduct traverses the Plan Area in a southeasterly direction. Otherwise, there are no notable or unique geologic features within the VCIP Plan Area.

Tectonics and Seismicity

No portions of the Plan Area are in an Alquist-Priolo Earthquake Fault Zone and no known active faults traverse the Plan Area (CGS 2015a). (An “active fault” is defined as a fault that has had surface displacement within the Holocene age, i.e., within the last 11,700 years.) However, there are several active faults in the Diablo Range to the west, including the San Andreas Fault Zone, the Nunez Fault Zone, and the Great Valley Fault System (see Figure 4.7-3). The nearest segment of the San Andreas fault is located 15 miles southwest of the Plan Area at Parkfield in southeast Monterey County. The San Andreas fault is estimated to be capable of producing a maximum magnitude (M) 7.7 earthquake along the segments nearest to the Plan Area. The Nunez fault is a designated Alquist-Priolo Earthquake Fault Zone and is located about 10 miles west of the Plan Area at its nearest point. The Great Valley Fault System, which runs parallel to and east of the San Andreas Fault Zone, is composed of blind thrust faults, which do not intersect the ground surface but can cause significant shaking and ground deformation.

Another active fault in the project vicinity is the Ortigalita Fault Zone which extends southeastward from the San Luis Reservoir for approximately 23 miles, and ends about 10 miles from the northwest corner of the Plan Area. The Ortigalita fault has an estimated maximum earthquake magnitude of 7.1 at its epicenter.

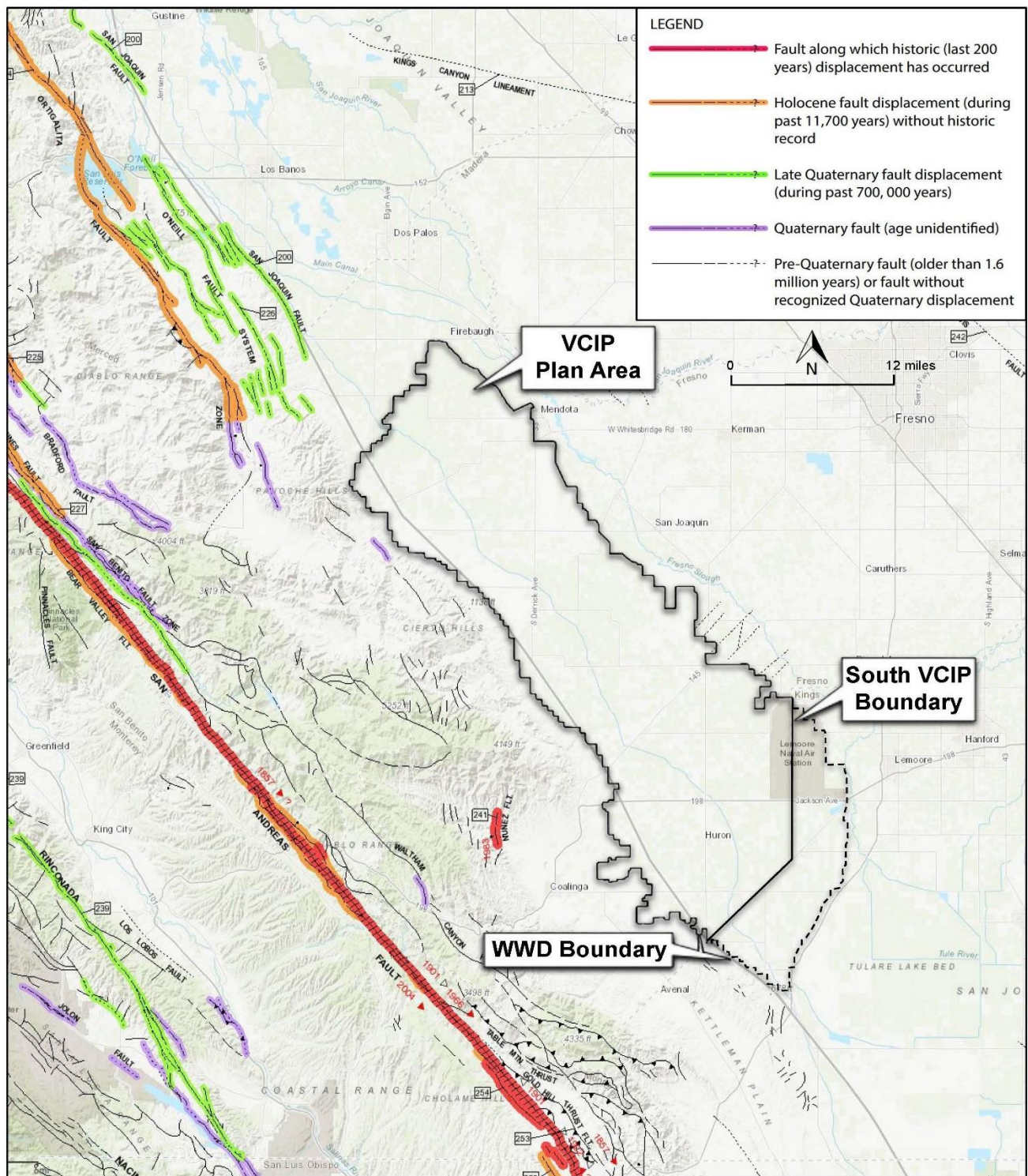
A high magnitude earthquake along the faults described above could cause moderate to high intensity ground shaking in the Plan Area (Fresno County 2023b; CGS 2000).

The most recent large earthquake near the Plan Area was the Kettleman Hills earthquake of August 1985, which had a magnitude of 6.0, and whose epicenter was located about 1 mile west of the Plan Area. It was preceded by the 1982 New Idria earthquake (M 4.8), approximately 10 miles west of the Plan Area, and the May 1983 Coalinga earthquake (M 6.5), approximately 5 miles west of the Plan Area. In June-July 1983, the Nunez earthquakes (M 6.0), occurred in the Nunez Fault Zone, a 3-mile-long fault zone located 2 miles northwest of Coalinga.

There are two inactive fault systems which run along the eastern edge of the Diablo Range to the northwest of the Plan Area. The first of these is the San Joaquin fault, which generally runs parallel to I-5 on the west and extends to within 7 miles of the Plan Area. The second is the O’Neill Fault System, which comprises a series of faults that run through the foothills of the Diablo Range in an approximately 7-mile-wide band extending from I-5 westward toward the Ortigalita Fault Zone and extends to within 5 miles of the Plan Area. These fault systems are not considered active or potentially active because there is no evidence that they were subject to displacement in the past 11,700 years, although the geologic record indicates activity in the past 700,000 years (CGS 2015b).

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4.7. Geology, Soils and Paleontological Resources



Source: California Geological Survey, 2025

Earthquake Faults

Figure 4.7-3

Seismic, Geologic, and Soils Hazards

Ground Shaking

The intensity of ground shaking at a given location will increase with earthquake magnitude and the distance of the site to a fault rupture. A common measure of ground motion during an earthquake is the Peak Ground Acceleration (PGA). The PGA varies from place to place and is dependent on the distance from the epicenter and the character of the underlying geology (e.g., hard bedrock, soft sediments, or artificial fills). U.S. Geological Survey (USGS) mapping indicates values of PGA that have a 10 percent probability of being exceeded in 50 years. Use of this probability level allows engineers to design structures to withstand ground motions that have a 90 percent chance of not occurring in the next 50 years, making buildings safer than if they were designed merely for the most probable events.

The Modified Mercalli Intensity (MMI) Scale assigns an intensity value based on the observed effects of ground shaking produced by an earthquake. The MMI values for shaking intensity range from I (earthquake not felt) to XII (damage nearly total). Significant structural damage typically does not occur until an event reaches an MMI value of IV.

According to the USGS, there is a 10 percent chance that the Plan Area could experience PGA values ranging from 0.20 to 0.40g over the next 50 years (g is the acceleration due to Earth's gravity, equivalent to g-force). The lower accelerations would be expected to occur along the eastern margins of the Plan Area near Mendota and the highest values would be expected to occur in the southwest portion of the Plan Area near Coalinga which is nearest to the causative faults (USGS 2014). The 0.20g PGA corresponds to an MMI value of VII which would be perceived as strong shaking and would result in light damage to structures. The 0.40g PGA corresponds to an MMI value of VIII which would be perceived as very strong shaking resulting in moderate damage to structures. There is a 90 percent chance that PGAs experienced on the project site over the next 50 years would be lower than these values for the locations indicated. Thus, these PGA values represent a conservative estimate of ground shaking levels that can be reasonably anticipated for the purposes of designing and constructing structures. For comparison, lands located near the San Andreas Fault Zone near Parkfield in Monterey County have a 10 percent chance of peak ground accelerations of 0.80g and greater, corresponding to an MMI value of IX which is perceived as violent shaking resulting in heavy damage to structures (USGS 2023).

Fault 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 breakage of ground along the surface trace of the fault. Damage resulting directly from fault rupture generally occurs only where structures are located immediate to the fault traces that rupture. No portion of the Plan Area is located within an Alquist-Priolo Earthquake Fault Zone. The closest known active or potentially active faults are the Ortigalita Fault Zone, the nearest occurrence of which is approximately 10 miles northwest of the Plan Area, and the Nunez Fault Zone, which is located 10 miles west of the southern portion of the Plan Area. There is no evidence indicating the presence of faults or fault traces in the Plan Area; therefore, the potential for fault rupture at the site is extremely low.

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Liquefaction

Soil liquefaction is the phenomenon in which loose, saturated soil loses structural strength during high-intensity ground shaking due to induced shearing strains, which essentially transforms the soil into 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.

No regulatory mapping of liquefaction zones has been prepared by the California Geological Survey (CGS) for the Plan Area, with the nearest such mapping completed for Santa Clara County (CGS 2015a). In the eastern portions of the Plan Area, most soil series have high to moderate clay content, indicating a low susceptibility to liquefaction (see Figure 4.2-1 in Section 4.2. *Agriculture and Forestry Resources*). The nearest groundwater within eastern areas of the Plan Area was most recently (April 2017) mapped at 5 to 25 feet below the ground surface. Given the high clay content of soils in this area, the relatively high groundwater conditions would not be sufficient to induce liquefaction during a seismic event. In portions of the Plan Area west of the Aqueduct, soils tend to have lower clay content; however, groundwater elevations within the western areas of the Plan Area are generally 50 feet or more below the ground surface, indicating a low susceptibility to liquefaction (WWD 2017c). 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 low due to distance from the nearest causative faults in the Diablo Range.

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 Plan Area site 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 Plan Area.

Seismic Settlement

Seismic settlement may occur as saturated and unsaturated granular soils become rearranged during ground shaking resulting in volume reduction, surface deformation, and potential settlement of overlying structural improvements. 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. Earthquake-induced settlement has the greatest potential to occur where loose granular materials such as sandy soils are present above the groundwater table. The potential for the occurrence of an earthquake capable of promoting seismic settlement is low throughout the Plan Area where clay soils are most prevalent and loose sandy soils are absent, although sandy loam soils occur along the base of the western foothills and along major drainage courses. The general potential for significant surface deformation resulting from seismic settlement is considered low for the Plan Area.

Landslides

No regulatory mapping of landslide zones has been prepared by the CGS for the Plan Area, with the nearest such mapping completed for Santa Clara County (CGS 2014). USGS landslide mapping shows that the Plan Area is not within a landslide hazard area; the nearest landslide areas are in the Diablo Range to the west (USGS 2025b). Due to its relatively level terrain, the Plan Area has a very low susceptibility to landslide hazard. {00081423.1}

Subsidence

Ground subsidence is the gradual settling of the Earth's surface due to the movement of earth below the ground surface. Subsidence is typically caused when overdrafting of a groundwater basin reduces the upward hydraulic pressure that supports the overlying land surface, resulting in consolidation and compaction of the underlying soils. Subsidence has the potential to damage infrastructure, including reducing the freeboard and flow capacity of the San Luis Canal/California Aqueduct and irrigation delivery canals and pipelines, as well as causing structural damage to bridges, roads, flood control facilities and other structures. Additionally, the compression of the water bearing zones results in permanent reduction of the water storage capacity of the aquifer. Large areas of the San Joaquin Valley, including the Plan Area, have been subject to subsidence from groundwater use for many years. Between 1926 and 1970, the land on the Panoche Fan in the Plan Area subsided by up to 24 feet (DWR 2020, Fig. 2-54). Between 1967 and 2015, the land in the vicinity subsided by up to 2.0 feet (DWR 2020, Fig. 2-57). As discussed in Section 4.10. *Hydrology and Water Quality*, groundwater pumping in the area may temporarily increase during drought years when the District's CVP contract water allocation is curtailed. Subsidence may result from cumulative water withdrawals from many agricultural wells.

Subsidence generally occurs as a region-wide change in surface elevation, although localized differential displacements and settlement of the ground surface can damage foundations and structures. Under the Groundwater Sustainability Plan (GSP) adopted by the District in 2020, an important goal is to limit subsidence to levels that do not lead to undesirable results, such as impacts to infrastructure, including the San Luis Canal/California Aqueduct. The GSP is discussed in detail in Section 4.10. *Hydrology and Water Quality*.

Soils

The most recent comprehensive soil survey of western Fresno County was completed in 2006 by the National Resources Conservation Service (NRCS), formerly the Soil Conservation Service (SCS). According to that soil survey, there are five main soil types in the Plan Area, including the Ciervo, Cerini, Tranquillity, Lethent, and Westhaven soils. The Ciervo series is characterized by very deep, moderately well drained, clay soils and is found on the eastern portions of alluvial fans along the center of the Plan Area. The Cerini series is characterized by very deep, well drained, clay loam soils and is found on alluvial fans in the northwestern and south-central portions of the Plan Area. The Tranquillity series is characterized by very deep, somewhat poorly draining clay soils and is found on distal portions of alluvial fans in the northeastern portion of the Plan Area. The Lethent series is characterized by very deep, moderately well drained, clay loam soils and is found on unburied fan remnants in the southeastern portion of the Plan Area. The Westhaven series is characterized by very deep, well drained, loam or clay loam soils and is found on alluvial fans in the south central and southwestern portions of the Plan Area (NRCS 2006).

The dominant soil textures within the Plan Area include clay loam, clay, and sandy loam. The clay loam soils are found throughout the Plan Area, while the clay soils are dominant in the northeastern area located east of the San Luis Canal/California Aqueduct and north of State Route 145 (see Figure 4.2-1 in Section 4.2. *Agriculture and Forestry Resources*). The sandy loam soils are found in limited areas along the foothills of the Diablo Range and along major drainage courses. The soil texture affects both hydraulic conductivity (percolation rate) and drainage capability, with the fine clay soils exhibiting the poorest absorption and drainage capabilities, while the coarser textured soils, such as the sandy loams, have higher hydraulic

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conductivity and drainage capability. In general, drainage capability and hydraulic conductivity decrease from west to east in the Plan Area, corresponding to increasingly high clay content of the soils. All soil units within the Plan Area have a high potential corrosivity to uncoated steel, and moderate to high potential corrosivity to concrete (NRCS 2006).

Soil Expansion

Expansive soils are typically associated with fine-grained clayey soils that have the potential to shrink and swell during seasonal wetting and drying cycles. The ability of clayey soil to change volume with variations in moisture content can result in uplift or cracking to foundation elements or other rigid structures such as slabs-on-grade, rigid pavements, or other slabs or hardscape founded on these soils. Most of the soils covering the Plan Area are clays or clay loam soils which have a high shrink-swell (i.e., expansion) potential. The sandy loam soils in the western portions of the Plan Area have low expansion potential (NRCS 2006).

Erosion Potential

Within most of the Plan Area, the combination of clayey soils and nearly flat terrain results in negligible potential for erosion by stormwater runoff. On the alluvial fans western portions of the Plan Area, the localized sloping terrain and looser soil cover result in a somewhat greater, but still low potential for erosion (NRCS 2006).

Due to high wind conditions that occur periodically in spring, wind erosion is prevalent on the west side of the San Joaquin Valley where the Plan Area is 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

The San Joaquin Valley is underlain by deep water-bearing alluvial deposits. For planning purposes, DWR divides the valley into groundwater basins and subbasins. The Plan Area is located entirely within the Westside Subbasin of the San Joaquin Groundwater Basin. The boundaries of the Westside Subbasin correspond closely with the boundaries of the District.

The Westside Subbasin consists of two main water-bearing zones, an upper and a lower zone, separated by the impervious Corcoran Clay formation. Corcoran Clay divides the groundwater system into two major aquifers – a confined aquifer below (Lower Aquifer) and a semi-confined aquifer above (Upper Aquifer). Within the Plan Area, the Corcoran Clay layer ranges in thickness from approximately 20 to 100 feet, and occurs at depths ranging from approximately 400 to 800 feet (DWR 2020, Figures 2-30 and 2-31).

Based upon the District's December 2015 Deep Groundwater Mapping (the most recent available), the depth to the Upper Aquifer is variable throughout the Plan Area, ranging from a high of about 50 feet below surface grade (BSG) just south of Mendota, to a low of almost 400 feet BSG in the vicinity of NAS Lemoore in the southeast (WWD 2017a).

An additional water-bearing zone occurs near the ground surface and is referred to as shallow (perched) groundwater. Based upon the District's Shallow Groundwater Surface mapping for April 2017 (the most recent available), the depth to shallow groundwater throughout the eastern portions of the Plan Area ranges from 5 to 45 feet BSG, while nearest groundwater in the Plan Area west of the Aqueduct is generally below 50 feet {00081423.1}

BSG (WWD 2017c). 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 4.2. Agriculture and Forestry Resources, 4.10. Hydrology and Water Quality, and 4.17. Utilities and Service Systems, for additional discussions of groundwater conditions.)

4.7.1.2. PALEONTOLOGICAL RESOURCES

The following discussion of paleontological resources is based on the “VCIP – Paleontology Memo” prepared by Earthview Science in June 2025. The paleontology memo is kept administratively confidential to avoid public disclosure of potential fossil localities.

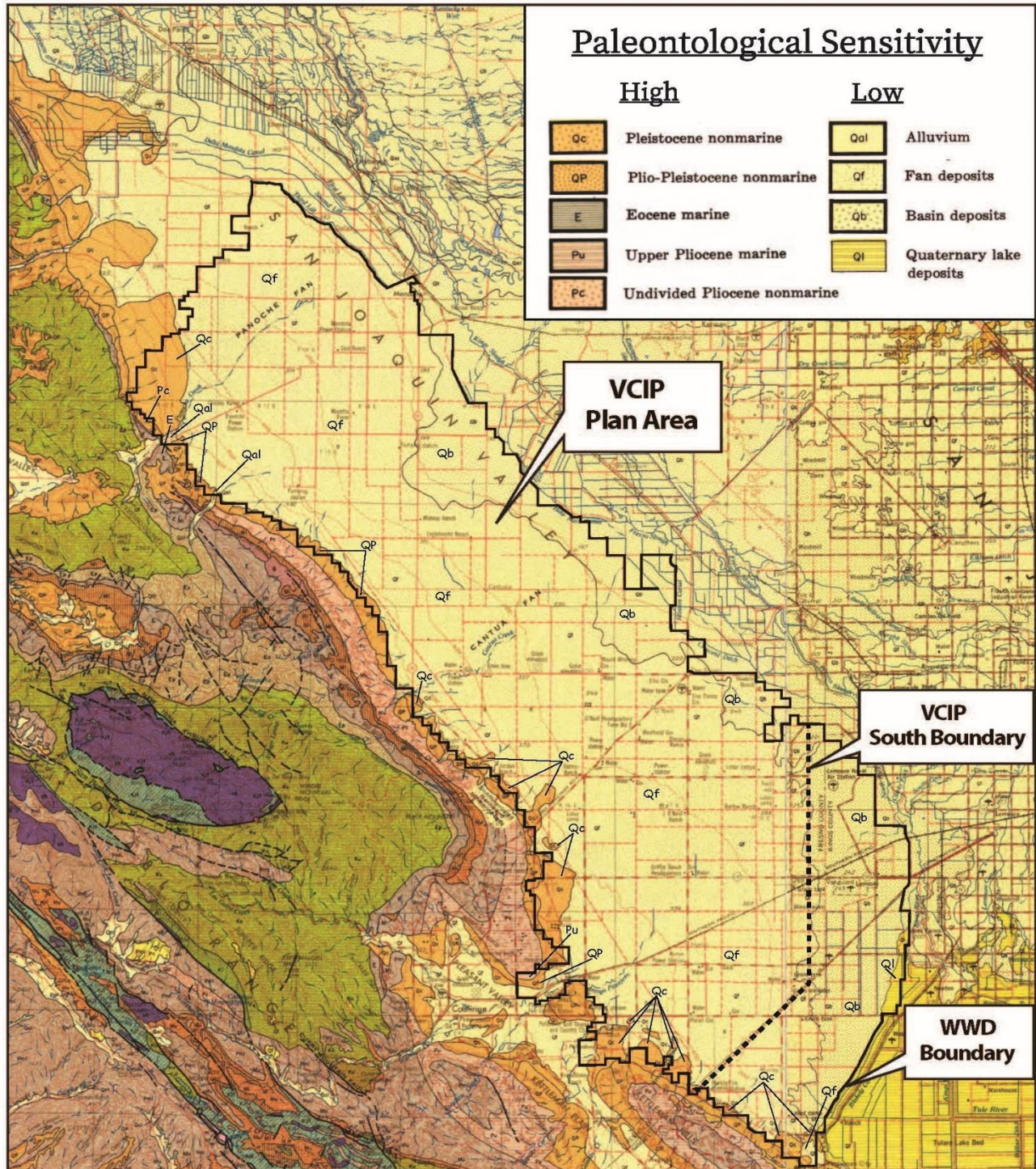
Paleontological resources comprise fossils – the remains or traces of once-living organisms preserved in sedimentary deposits – together with the geologic context in which they occur. Fossils are scientifically important as they provide the only available direct evidence of the anatomy, geographic distribution, and paleoecology of organisms of the past. Significant paleontological resources may include vertebrate fossils and their associated taphonomic (fossilization) and environmental indicators; invertebrate fossils; and/or plant fossils. It is noted that no vertebrate fossil localities have been recorded within the Plan Area, with the nearest fossil sites located near Tranquillity, Coalinga, the Delta-Mendota Canal, and the Tulare Lakebed (EVS 2025).

Due to the correlations between geologic formations and the potential for fossil occurrence, the paleontological sensitivity of an area can be predicted based on the area’s geology. The surface soils of the Plan Area are underlain by alluvium deposited during the Quaternary period (approximately 2.6 million years ago to present). Quaternary alluvium is further divided into a number of subunits, including the following two main units which occur in the Plan Area: Quaternary fan deposits (Qf), consisting of materials eroded from the Coast Ranges forming alluvial fans, which comprise the majority of the surface materials in the Plan Area; and Quaternary basin deposits (Qb), located along the eastern margin of the Plan Area, which was formed by flood flows and overbank events along the Kings River, Fresno Slough, and San Joaquin River (see Figure 4.7-4).

Also included in the Plan Area, but much less prevalent, are the following two units: Quaternary alluvium (Qal), which occurs along the major drainage courses entering the valley from the western foothills; Pleistocene nonmarine (Qc) and Plio-Pleistocene nonmarine (QP/QTt) which both occur along the base of the Diablo Range along the western margins of the Plan Area. An additional unit - Quaternary lake deposits (Ql) – occurs in association with the Tulare Lakebed in Kings County, and is not found in the Plan Area but extends slightly into the southeastern margin of the District’s service area in Kings County (EVS 2025).

On a temporal scale, the Quaternary period is divided into two epochs or ages, including the Pleistocene Epoch (about 2.6 million to 11,700 years ago) and the more recent Holocene Epoch (about 11,700 years ago to present). The Pleistocene Epoch (informally termed the Ice Age) is the depositional period that yields vertebrate fossils. The Holocene deposits, which comprise more recent layers that were deposited on top of the Pleistocene material, yield few, if any, vertebrate fossils and thus have a low paleontological sensitivity. However, the thickness of the Holocene layer covering the paleontologically sensitive Pleistocene (or older Quaternary) alluvium is highly variable, so the depth of the older Quaternary alluvium at a given location is uncertain.

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Sources: Earthview Science, 2025
California Geological Survey, 2025

Paleontological Sensitivity
Figure 4.7-4

The older Quaternary alluvial deposits (Qc) have yielded numerous significant vertebrate fossils at two sites in western Merced and Fresno counties (approximately 30 miles northwest of the Plan Area and 4 miles east of the Plan Area, respectively) and are considered to have high paleontological resources potential. The specimens found include land mammals such as deer, mammoth, camel, horse, bison, badger, mole, rabbit, gray fox, and coyote, as well as birds, reptiles and fish. Within the areas with Quaternary fan (Qf) and basin (Qb) deposits, the Holocene materials at the surface are typically too young to contain fossilized material. In these areas, the more sensitive Pleistocene material is typically several feet or more below the surface and thus the Qf and Qb deposits have a low potential to yield paleontological resources in the upper soil layers. It is considered highly unlikely that fossils are present within Qf or Qb deposits at depths shallower than 5 feet below the ground surface, but fossils may be present at depth within the underlying Pleistocene Qc material, and in the Plio-Pleistocene QP/QTt (EVS 2025).

In summary, the recent alluvial deposits that cover most of the Plan Area have a low sensitivity for paleontological resources at or near the ground surface, but sensitivity is high in the underlying older alluvium which may occur deeper than five feet below the ground surface. Along the western margins of the Plan Area, the Pleistocene and Plio-Pleistocene deposits both have high sensitivity for paleontological resources.

4.7.2. Regulatory Context

The following is an overview of the principal statutes, regulations, plans and programs related to geology, soils and paleontology applicable to the VCIP. A comprehensive overview of the regulatory context related to geology, soils and paleontology is provided section 8.1 (Geologic and Seismic Hazards) of the *Fresno County 2040 General Plan Background Report* (Fresno County 2023b) which is available at <https://www.fresnocountyca.gov/files/sharedassets/county/v/2/public-works-and-planning/development-services/planning-and-land-use/general-plan/fcgpr-background-report-2023-05-10.pdf>.

4.7.2.1. GEOLOGY AND SOILS

Federal

Earthquake Hazards Reduction Act

The Earthquake Hazards Reduction Act (EHRA) of 1977 (42 U.S.C. § 7701 et seq.) established the National Earthquake Hazards Reduction Program as a long-term earthquake risk reduction program for the United States which focuses on: developing effective measures to reduce earthquake hazards; promoting the adoption of earthquake hazard reduction activities by federal, state, and local governments, national standards and model code organizations, engineers, architects, building owners, etc.; and improving the understanding of earthquakes and their effects on people and infrastructure through interdisciplinary research.

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State

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act of 1972 (formerly the Alquist-Priolo Special Studies Zone Act) (Pub. Res. Code, § 2621 et seq.) 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 to demonstrate that development sites are not threatened by future surface displacement. There are two Alquist-Priolo Earthquake Fault Zones mapped in the foothills of the Diablo Range to the west of the Plan Area. These include the Ortigalita Fault Zone located approximately 10 miles northwest of the Plan Area, and the Nunez Fault Zone located approximately 10 miles west of the southern portion of the Plan Area. No other Alquist-Priolo Fault Zone Maps cover any part of the Plan Area (CGS 1986).

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act of 1990 (Pub. Res. Code, § 2690 et seq.) is intended to protect the public from the effects of strong ground shaking, liquefaction, landslides, or other ground failure/hazards caused by earthquakes (not including surface faulting which is regulated by the Alquist-Priolo Act). 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 be conducted and appropriate mitigation measures incorporated into the project design. There are no Seismic Hazard Maps that include the Plan Area (CGS 2015a).

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 purpose of the CBC is to regulate building design and construction and is separate from related codes such as the Electrical Code, Plumbing Code, Mechanical Code, Fire Code, Energy Code, etc. Chapter 18 of the CBC requires analysis of slope stability, liquefaction, and surface rupture attributable to faulting or lateral spreading, plus an evaluation of lateral pressures on basement and retaining walls, liquefaction and soil strength loss, and lateral movement or reduction in foundation soil-bearing capacity. It also addresses measures to be considered in structural design, which may include ground stabilization, selecting appropriate foundation type and depths, selecting appropriate structural systems to accommodate anticipated displacements, or any combination of these measures.

While the significance criteria in Appendix G of the CEQA Guidelines refers to 1994 Uniform Building Code (UBC) Table 18-1-B for identification of expansive soils, the updated 2019 and 2022 editions of the CBC no longer cite this table. Instead, CBC section 1803.5.3 directs building officials to require specific soil tests to determine if soils are expansive. CBC section 1808.6 also contains design criteria for expansive soils and includes measures to address the effects of expansive soils, including slab-on-grade foundations, removal of expansive soil, and soil stabilization techniques.

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NPDES General Construction Permit

The Central Valley Regional Water Quality Control Board (CVRWQCB) administers the National Pollutant Discharge Elimination System (NPDES), which protects water quality during construction activities disturbing one or more acres of land. The NPDES program requires preparation of a risk assessment and a Storm Water Pollution Prevention Plan (SWPPP) under the NPDES General Construction Permit prior to beginning construction. The risk assessment and SWPPP must be prepared by a state-qualified SWPPP preparer. The SWPPP provides specific construction-related best management practices (BMPs) to prevent soil erosion and loss of topsoil. Section 4.10. *Hydrology and Water Quality* provides additional discussion of SWPPP requirements.

Fresno County

Fresno County General Plan

The 2024 Fresno County General Plan (Fresno County 2024b) includes the following goals and policies related to geology, soils and paleontological resources that may be relevant to the VCIP and Transmission Corridors:

Health and Safety Element

D. Seismic and Geologic Hazards

GOAL HS-D To minimize the loss of life, injury, and property damage due to seismic and geologic hazards.

Policy HS-D.3 **Soils and Geologic Seismic Analysis**
The County shall require that a soils engineering and geologic-seismic analysis be prepared by a California-registered engineer or engineering geologist prior to permitting development, including public infrastructure projects, in areas prone to geologic or seismic hazards (i.e., fault rupture, ground shaking, lateral spreading, lurch cracking, fault creep, liquefaction, subsidence, settlement, landslides, mudslides, unstable slopes, or avalanche).

Policy HS-D.4 **Soils and Geologic-seismic Structure Design**
The County shall require all proposed structures, additions to structures, utilities, or public facilities situated within areas subject to geologic-seismic hazards as identified in the soils engineering and geologic-seismic analysis to be sited, designed, and constructed in accordance with applicable provisions of the California Building Code (Title 24 of the California Code of Regulations) and other relevant professional standards to minimize or prevent damage or loss and to minimize the risk to public safety.

Policy HS-D.5 **Alquist-Priolo Earthquake Fault Act**
Pursuant to the Alquist-Priolo Earthquake Fault Zoning Act (Public Resources Code, Chapter 7.5), the County shall not permit any structure for human occupancy to be placed within designated Earthquake Fault Zones unless the specific provisions of the Act and Title 14 of the California Code of Regulations have been satisfied.

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Policy HS-D.7 Soils Report

The County shall require a soils report by a California-registered engineer or engineering geologist for any proposed development, including public infrastructure projects, that requires a County permit and is located in an area containing soils with high “expansive” or “shrink-swell” properties. Development in such areas shall be prohibited unless suitable design and construction measures are incorporated to reduce the potential risks associated with these conditions.

Policy HS-D.8 Minimize Soil Erosion

The County shall seek to minimize soil erosion by maintaining compatible land uses, suitable building designs, and appropriate construction techniques. Contour grading, where feasible, and revegetation shall be required to mitigate the appearance of engineered slopes and to control erosion.

Open Space and Conservation Element

J. Historical, Cultural, and Geological Resources

GOAL OS-J To identify, protect, and enhance Fresno County’s important historical, archeological, paleontological, geological, and cultural sites and their contributing environment, and promote and encourage preservation, restoration, and rehabilitation of Fresno County’s historically significant resources in order to promote historical awareness, community identify [sic], and to recognize the county’s valued assets that have contributed to past county events, trends, styles of architecture, and economy.

Policy OS-J.12 Geologic Resource Preservation

In approving new development, the County shall ensure, to the maximum extent practicable, that the location, siting, and design of any project be subordinate to significant geologic resources.

Fresno County Solar Facility Guidelines

The Fresno County Solar Facility Guidelines (Fresno County 2017c) contain the following requirement that is relevant to geology and soils:

4. Identify (with supporting data) the current soil type and mapping units of the parcel pursuant to the standards of the California State Department of Conservation and the Natural Resources Conservation Service.

A discussion of the consistency of VCIP projects with the Fresno County Solar Facility Guidelines is provided in Section 4.11. *Land Use and Planning*.

Fresno County Ordinance Code

Fresno County Ordinance Code (County Ordinance Code), section 15.08.010, adopts and incorporates by reference the 2022 Edition of the CBC, with certain exceptions and amendments. The CBC is described earlier in this section.

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Fresno County Grading Ordinance

The Fresno County Grading and Excavation Ordinance (Chapter 15.28 of the County Ordinance Code) sets forth rules and regulations related to excavation, grading, and earthwork construction, including fills and embankments. The ordinance sets forth safety and environmental control measures for construction practices (Fresno County 2024c).

Fresno County Local Agency Management Program (LAMP)

Pursuant to Water Code section 13291(b)(3), the Fresno County Local Agency Management Program (LAMP) was established in 2017 for the purpose of regulating the design, installation, and operation of on-site wastewater treatment systems (OWTS) within the County. The program covers septic tank and leach field systems for the treatment and disposal of wastewater where conveyance to public sanitary sewers is not available. The Fresno County Public Works and Planning Department is responsible for the review and approval of proposed septic systems to ensure compliance with all applicable standards to protect groundwater quality (Fresno County 2017b).

Fresno County Improvement Standards

The Fresno County Improvement Standards serve as an engineering reference for Fresno 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 construction of streets, water supply systems, storm drainage, and sewage systems, as well as requirements for geotechnical reports for the proposed improvements (Fresno County 1966).

4.7.2.2. PALEONTOLOGICAL RESOURCES

State

California Public Resources Code (PRC)

California Public Resources Code (PRC) section 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.”

Fresno County

The following Fresno County General Plan goal and policy relate to paleontological resources:

Open Space and Conservation Element

K. Historical, Cultural, and Geological Resources

GOAL OS-J To identify, protect, and enhance Fresno County’s important historical, archeological, paleontological, geological, and cultural sites and their contributing environment, and promote and encourage preservation, restoration, and rehabilitation of Fresno County’s

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historically significant resources in order to promote historical awareness, community identify [sic], and to recognize the county's valued assets that have contributed to past county events, trends, styles of architecture, and economy.

Policy OS-J.4

Cultural Resources Protection and Mitigation

The County shall require that discretionary development projects, as part of any required CEQA review, identify and protect important historical, archeological, tribal, paleontological, and cultural sites and resources. For projects requiring ground disturbance and located within a high or moderate cultural sensitivity areas, a cultural resources technical report may be warranted, including accurate archival research and site surveys conducted by qualified cultural resources practitioners. The need to prepare such studies shall be determined based on the tribal consultation process and initial outreach to local or state information centers.

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 assessment of an area's potential to hold paleontological resources (i.e., the area's "sensitivity"), and outline measures to follow 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.

4.7.3. Environmental Impact Analysis

METHODOLOGY

Evaluation of potential impacts related to geology, soils, and paleontological was based on a review of maps and plans that may be relevant to the VCIP Plan Area, including the General Plan and "General Plan Background Report" of Fresno County, mapping and data published by the USGS the CGS, and the NRCS.

The evaluation of impacts to paleontological resources is based on the "VCIP – Paleontology Memo" prepared by Earthview Science in June 2025. The paleontology memo is kept administratively confidential to avoid public disclosure of potential fossil localities.

The analysis also considers current policies and regulatory requirements that may apply to VCIP projects, including those identified in *Section 4.7.2 Regulatory Context*, above.

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SIGNIFICANCE CRITERIA

Based on Appendix G of the CEQA Guidelines, implementation of the VCIP would be considered to result in a significant impact related to geology, soils, or paleontological resources if it would:

- a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:
 - i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, issued by the State Geologist for the area or based on other substantial evidence of a known fault. Refer to Division of Mines and Geology Special Publication 42.
 - ii) Strong seismic ground shaking.
 - iii) Seismic-related ground failure, including liquefaction.
 - iv) Landslides.
- b. Result in substantial soil erosion or the loss of topsoil.
- c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.
- d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994)¹, creating substantial direct or indirect risks to life or property.
- e. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water.
- f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

4.7.3.1. DIRECT AND INDIRECT EFFECTS

Valley Clean Infrastructure Plan

Impact GEO-1. Rupture of Known Earthquake Fault

There are no known active or potentially active earthquake faults in proximity to the VCIP Plan Area; therefore, the potential for impact from fault rupture is extremely low and not reasonably foreseeable. (*Less-than-Significant Impact*)

The VCIP Plan Area is not located within an Alquist-Priolo Earthquake Fault Zone. The closest mapped fault zones are the Nunez Fault, located 10 miles west, and the Ortigalita Fault Zone, located approximately 10 miles northwest of the Plan Area. The nearest segment of the San Andreas Fault Zone is located approximately 15 miles southwest of the Plan Area (see Figure 4.7-1). There is no evidence indicating the presence of active

¹ The 2022 Edition of the California Building Code (CBC) is adopted and incorporated by reference into the Fresno County Ordinance Code, at section 15.08.010, with certain exceptions and amendments.
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faults or fault traces within the immediate vicinity of the VCIP Plan Area. As such, potential hazards due to fault rupture within the Plan Area are extremely low, potential impacts are not reasonably foreseeable, and the potential impact associated with VCIP implementation is *less-than-significant*.

Mitigation Measures: No mitigation is required.

Impact GEO-2. Seismic Ground Shaking

Moderate to strong ground shaking expected within the VCIP Plan Area during a moderate to severe earthquake could result in damage to solar generating facilities, energy storage systems, substation, and transmission and gen-tie lines; however, any potential impacts would be addressed through compliance with existing regulations, standards, and codes. (*Less-than-Significant Impact*)

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 within the VCIP Plan Area. The greatest potential damage would result from an earthquake centered on the San Andreas Fault System, the Ortigalita Fault Zone, the Nunez Fault, or the Great Valley Fault System. As discussed in Section 4.7.1. *Environmental Setting* above, there is a 10 percent chance that a major earthquake centered on a nearby fault segment could result in a peak horizontal ground accelerations (PGA) of 0.20g to 0.40g within the Plan Area over the next 50 years, with the intensity of shaking increasing from east to west within the Plan Area. These PGAs correspond to a Modified Mercalli Index intensity ratings of VII and VIII which would be perceived as strong to very strong shaking resulting in light to moderate damage to structures.

Ground shaking would cause dynamic loading resulting in stress to buildings and structures. However, as described in Section 4.7.2. *Regulatory Context* above, the solar facilities and energy storage systems would be required to be designed and constructed to withstand substantial ground shaking in accordance the seismic design criteria of the CBC (which is incorporated into the Fresno County Building Code). The CBC provisions applicable to solar development within the Plan Area provide for a high degree of seismic strength and resistance to lateral forces (strong shaking) in construction to minimize risks to public safety and damage to property, corresponding to the magnitude of the seismic events reasonably expected in the region based on the best available science. Seismic design specifications for VCIP projects would be recommended by a California registered professional geotechnical engineer and incorporated into the construction plans for projects constructed as part of the VCIP.

For each energy resource and infrastructure project constructed under the VCIP, 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 implementation of VCIP projects.

Prior to issuance of grading and building permits, the geotechnical reports, construction plans and specifications for each project will be subject to approval by the Fresno County Building and Safety Team, with follow-up inspections to ensure compliance. The VCIP substations, transmission lines, and gen-tie lines would

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be constructed in accordance with seismic engineering design in compliance with the International Building Code (IBC) and the Institute of Electrical and Electronics Engineers (IEEE) standards. Based on design parameters established by the geotechnical investigations, all VCIP structures would be designed to resist or accommodate location-specific ground motions and conform to the seismic design standards. Compliance with existing regulations, codes, and standards would ensure that potential adverse effects from seismic ground shaking would be *less than significant*.

Mitigation Measures: No mitigation is required.

Impact GEO-3. Liquefaction, Lateral Spreading, and Seismic Settlement

There is potential for seismically-induced liquefaction, lateral spreading, and settlement within the VCIP Plan Area which could result in damage to foundations and structures; however, any potential impacts would be addressed through compliance with existing regulations, codes, and standards. (*Less-than-Significant Impact*)

Liquefaction

Liquefaction would typically pose a hazard where liquefaction-prone conditions are present, such as a combination of loose granular soils and shallow groundwater. Within the Plan Area, most soil series have a moderate to high clay content, indicating a low susceptibility to liquefaction. Although perched groundwater conditions occur within the Plan Area, these areas are typically associated with stiff clay soils which are not prone to liquefaction. However, there may be localized instances where liquefaction potential may exist, such as along stream beds and other water bodies, where conditions may include saturated soil conditions and unconsolidated sediments.

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 generally low potential for lateral spreading within the Plan Area since the land 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 may be retained within some VCIP project sites.

Seismic Settlement

Seismic settlement may occur as saturated and unsaturated granular soils become rearranged during ground shaking resulting in 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 occurrence of an earthquake with the capability of promoting seismic settlement within the Plan Area is generally low where the surface material consists mainly of moderate to very stiff clay soils. Some seismic settlement could occur in isolated locations where unconsolidated soils are present above the groundwater table.

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It is noted that the phenomenon of seismic settlement is sometimes referred to as “subsidence.” However, subsidence is more typically considered to be the result of groundwater pumping and consequent soil compression. Subsidence generally occurs as a region-wide change in surface elevation, although localized differential displacements and settlement of the ground surface can damage foundations and structures. Under the Groundwater Sustainability Plan (GSP) adopted by the District in 2020, an important goal is to limit subsidence to levels that do not lead to undesirable results, such as impacts to infrastructure, including the San Luis Canal/California Aqueduct. The District and Fresno County, in cooperation with state and federal agencies, are currently implementing a subsidence monitoring network throughout the Westside Subbasin. Any groundwater use by VCIP projects would be consistent with the GSP and within the limits the District’s Rules and Regulations (see Section 4.10. *Hydrology and Water Quality*). Construction of potential VCIP projects is not expected to cause or exacerbate subsidence. Any changes to existing subsidence conditions during VCIP implementation would be detected by the subsidence monitoring network. If necessary, the District may use data from the subsidence monitoring network to adjust management of the Westside Subbasin to avoid the exacerbation of existing subsidence issues. (See Section 4.7.1. *Environmental Setting* above for a brief description of subsidence.)

As discussed under Impact GEO-2, the VCIP energy resource projects would be designed in accordance with applicable CBC seismic design standards. The VCIP infrastructure improvements would be designed and constructed in compliance with the International Building Code (IBC) and the Institute of Electrical and Electronics Engineers (IEEE) standards. All structures would be designed as prescribed in project-specific design recommendations by a California-registered professional geotechnical engineer. Measures to minimize potential damage resulting from seismically-induced 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, installing supporting posts and piles in dense soil below the unstable soils, or other foundation design measures.

Adherence to building and electrical codes and standards, including implementation of engineering seismic design specifications in the project geotechnical report, would adequately address impacts related to ground failure, including liquefaction, lateral spreading, and seismic settlement. Compliance with existing regulations, codes, and required design standards would ensure that potential adverse effects related to seismically-induced ground failures would be *less than significant*.

Mitigation Measures: No mitigation is required.

Impact GEO-4. Landslide Hazard

The level terrain of the VCIP Plan Area has very low potential for landslides, and thus there would be no impact from landslide hazards to project construction, operation, or decommissioning. (No Impact)

The terrain is relatively level throughout the Plan Area and there are no mapped landslides or lands mapped as susceptible to landslides within the Plan Area or immediate vicinity. As such, the VCIP Plan Area has a very low

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potential for landslides and there would be no impact from landslide hazards associated with construction, operation, or decommissioning of VCIP energy resource and infrastructure projects.

Mitigation Measures: No mitigation is required.

Impact GEO-5. Expansive Soils

Most soil units within the VCIP Plan Area consist of clay soils that have high potential for expansion, which could result in potential damage to foundations and structures; however, any potential impacts would be addressed through compliance with existing regulations, codes, and standards. (*Less-than-Significant Impact*)

Expansive soils are typically associated with fine-grained clayey soils that have the potential to shrink and swell during seasonal wetting and drying cycles. The ability of clayey soil to change volume with variations in moisture content can result in uplift or cracking to foundation elements or other rigid structures such as slabs-on-grade, rigid pavements, or other slabs or hardscape founded on these soils. Most of the soils within the Plan Area are clays or clay loam soils which have a high shrink-swell (i.e., expansion) potential. The sandy loam soils in the western portions of the Plan Area have low expansion potential.

Potential hazards related to expansive soil conditions are addressed in the CBC, which requires design-level geotechnical investigations to identify and characterize expansive soil conditions and make project-specific engineering design recommendations to avoid structural damage due to soils expansion. The design recommendations would specify the most appropriate form of foundation design, based on the nature and extent of expansive soils beneath the planned project structures, foundations, and pads. The potential damage from soils expansion would be reduced by several alternative engineering measures (e.g., over-excavation and replacement with non-expansive soils; extending building foundations below the zone of shrink and swell; use of geofabrics as moisture barriers), as recommended by the project geotechnical engineer. The VCIP elements that may require special foundation design include the substations, battery storage systems, and O&M buildings, which collectively would occupy less than one percent of the typical solar facility site. The design specifications would be enforced by the Fresno County Building and Safety Team which would review and approve the project construction plans prior to issuance of grading and building permits and would follow-up with inspections to ensure compliance.

The VCIP infrastructure elements such as substations, transmission lines, and gen-tie lines would be designed and constructed pursuant to the International Building Code (IBC) and the Institute of Electrical and Electronics Engineers (IEEE) standards. Based on design parameters established by the geotechnical investigations, the structural elements of the infrastructure projects would be designed to resist or accommodate location-specific expansive soils. Compliance with existing regulations, codes, and standards would ensure that potential adverse effects related to expansive soils would be *less than significant*.

Mitigation Measures: No mitigation is required.

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Impact GEO-6. Erosion Potential

Development of the VCIP energy resource and infrastructure projects could cause water- and wind-related soil erosion during construction and operation of the solar and energy facilities; however, with implementation of erosion control measures specified in the state-mandated Storm Water Pollution Prevention Plans (SWPPPs) for each VCIP project, the potential erosion impacts would be less than significant. (*Less-than-Significant Impact*)

Development of the VCIP energy resource and infrastructure projects would involve site clearing, rough grading, soil compaction, and trenching for solar arrays and internal driveways, excavations for substation foundations, and drilling for transmission and gen-tie footings. Once vegetation is removed, the exposed and disturbed soil would be temporarily more susceptible to erosion from wind and rain. (See Section 4.10. *Hydrology and Water Quality*, Impact HYD-3 for a detailed discussion of impacts associated with erosion and sedimentation.) Within the Plan Area, the combination of clay soils and nearly flat terrain result in a generally low natural potential for erosion by rainfall and runoff. However, the seasonal high wind conditions result in high potential for wind erosion on exposed soils within the Plan Area; however, the potential for dust generation during construction would be minimized by implementation of Dust Control Plans as approved by the San Joaquin Valley Air Pollution Control District (SJVAPCD). The erosion controls required during grading and construction of all VCIP projects, including infrastructure projects, would be specified in the state-mandated SWPPPs to be prepared prior to commencement of site grading. SWPPPs include standard requirements for preservation of existing vegetation when feasible, staged seeding and revegetation as work progresses, and establishment of permanent vegetation. At the time of decommissioning for each project, another SWPPP would be required to address stormwater runoff during this final project phase. Implementation of the required SWPPPs would result in *less-than-significant* erosion impacts during grading, construction, and decommissioning of VCIP facilities. (See Section 4.10. *Hydrology and Water Quality* for a detailed discussion of SWPPPs.)

Erosion potential during operation of the VCIP facilities would be negligible. As described in Section 4.10. *Hydrology and Water Quality*, the solar arrays would occupy approximately 90 percent of each site, with the ground beneath retained in vegetative cover. Internal driveways composed of permeable gravel or compacted earth would comprise approximately nine (9) percent of each site. It is anticipated that less than one (1) percent of each site would consist of impervious surfaces. These areas would be revegetated, as noted above and described in Impact HYD-3. In addition, each project would be subject to the provisions of the SWPPP which address post-construction stormwater runoff. The absence of exposed soils during operations, and the virtually flat topography would not be conducive to erosion (see Figure 4.1-1). 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 project site. Therefore, the very low potential for erosion impacts to occur during the operational phases of the VCIP facilities would be *less than significant*.

Mitigation Measures: No mitigation is required.

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Impact GEO-7. Soil Corrosivity

Corrosive soils within the VCIP Plan Area could cause damage to project structures, foundations, and utilities; however, any potential impacts would be addressed through compliance with existing regulations, codes, and standards. (*Less-than-Significant Impact*)

The soil units throughout the Plan Area have a high potential corrosivity to uncoated steel, and a moderate to high potential corrosivity to concrete (NRCS 2006). Unless buried steel and concrete elements are properly treated, the site soil conditions could cause damage to such buried structures under moist environments.

Potential hazards related to solar and energy storage structures due to corrosive soil conditions are addressed in the CBC, which requires design-level geotechnical investigations to identify the potential for corrosion and make corresponding project-specific engineering design recommendations. 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 VCIP infrastructure projects would be designed and constructed pursuant to the IBC and the IEEE standards. Based on design and treatment measures established by the geotechnical investigations, the buried elements of the infrastructure projects would be designed for protection from potential soil corrosivity.

Compliance with existing regulations, codes, and standards would ensure that potential adverse effects related to soil corrosivity would be *less than significant*.

Mitigation Measures: No mitigation is required.

Impact GEO-8. Soil Suitability for Wastewater Disposal

The domestic wastewater disposal requirements for operation of VCIP facilities would be provided by septic tanks and leach fields designed and constructed in accordance with County requirements, ensuring that the soils would be capable of adequately accommodating the effluent generated by the VCIP projects. (*Less-than-Significant Impact*)

During construction and decommissioning of VCIP solar and energy storage projects, wastewater disposal would be provided by portable chemical toilets which would be serviced by a private contractor. During project operation, the solar and energy storage facilities would utilize on-site septic tanks and leach fields for disposal of wastewater associated with each project's Operations and Maintenance (O&M) building. Each project septic system would include a septic tank and an associated leach field. To ensure that the project soils would be capable of supporting disposal of the wastewater effluent generated by the O&M facilities, each project septic system would be designed in accordance with the Fresno County Plumbing Code, the Fresno County Improvement Standards, and the design criteria of the Fresno County Local Area

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Management Program (LAMP) as approved by the State Water Resources Control Board (SWRCB) (Fresno County 2017b). Adherence to these requirements would ensure that the soils in the planned leach field areas would be capable of adequately accommodating the wastewater effluent generated by the VCIP facilities. In soils with insufficient percolation for conventional septic systems, wastewater disposal would require a specially designed or engineered system. The septic systems would be subject to the approval of the Water and Natural Resources Division and the Building and Safety Division of the Fresno County Department of Public Works and Planning.

During construction of the substations, transmission lines, and gen-tie lines, it is expected that portable toilet facilities would provide wastewater service for construction workers. No permanent employees would be required for the transmission and gen-tie lines, so permanent wastewater facilities would not be required once that infrastructure is completed. It is likely that the VCIP collection substations would include permanent staff, in which case the substations would include septic systems designed and constructed in accordance with County requirements as described above.

In summary, domestic wastewater disposal systems at VCIP facilities would be designed and constructed as required by state-mandated design criteria and standards, such that potential impacts related to soil suitability for wastewater disposal would be *less than significant*.

Mitigation Measures: No mitigation is required.

Impact GEO-9. Loss of Paleontological Resources

Construction of VCIP energy resource and infrastructure projects could result in the destruction of paleontological resources. (*Less-than-Significant Impact with Mitigation*)

The following evaluation of impacts to paleontological resources is based on the “VCIP – Paleontology Memo” prepared by Earthview Science in June 2025 (EVS 2025). The paleontology memo is kept administratively confidential to avoid public disclosure of potential fossil localities.

As discussed in Section 4.7.1. *Environmental Setting*, the Holocene-age alluvial fan (Qf) and basin (Qb) deposits underlie the majority of the Plan Area, including most of the potential Development Focus Areas (DFAs), all of the VCIP collection substations and connecting transmission corridors, and most of the gen-tie lines. These areas have a low paleontological resource potential because they are generally too young to preserve significant fossils; however, the older Pleistocene-age alluvium underlies the younger alluvium at depth. The depth at which the older sensitive geologic material occurs is variable, and although its depth at a given location is unknown, it is generally considered to be more than 5 feet below the ground surface in the areas overlain with Holocene alluvial fan and basin deposits within the Plan Area. Although the subsurface older alluvium is considered to have a high potential for paleontological resources, there are no recorded fossil locations within the Plan Area, and the solar and energy storage projects constructed within and near the Plan Area over the past 15 years have not encountered any fossil material.

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Within the solar PV projects, steel posts supporting the solar mounting systems would be driven 5 to 8 feet into the ground, with depths varying up to 6 feet in clay soils and up to 8 feet into looser soils. The deeper posts may extend into the sensitive older alluvium, but since the Plan Area is composed mainly of clay soils, the majority of the posts would extend to the shallower depths (i.e., up to 6 feet deep). Although 5 feet is considered the minimum depth at which older alluvium may be encountered, it is likely that the upper Holocene layer may extend deeper than 5 feet in the alluvial fans that comprise most of the Plan Area (Conserva 2025). Even in sensitive strata, fossil localities are very rare and isolated, and do not appear in continuous layers. Considering that no fossil discoveries have been reported within the Plan Area, particularly during the past ten years when thousands of acres of solar facilities have been constructed in the Plan Area, the probability that the support posts would encounter fossil material is very low (Bell 2025). The support posts would consist of C-channels composed of thin angle-steel which have a very small footprint. Considering the very low probability that support posts for VCIP solar projects would damage paleontological resources, the potential impact of the support posts to paleontological resources is considered *less than significant*. (Bell 2025)

Trenching for medium-voltage underground electrical conduits would be up to 4 feet deep and thus would be unlikely to extend into the older alluvium. Excavations for substation foundations could be up to 10 feet deep, and drilling for transmission and gen-tie towers would reach depths of 30 to 55 feet. Thus, while most near-surface construction for VCIP projects would not affect the paleontologically sensitive older Pleistocene alluvium, the excavations for construction of facilities at depth could result in destruction of paleontological resources within these strata.

Some potential DFA lands are located along the western margins of the Plan Area where the high sensitivity Pleistocene and Plio-Pleistocene deposits are exposed at the ground surface. Any excavation that would occur in these areas could result in destruction of paleontological resources.

In summary, most of the construction activity associated with VCIP implementation would take place at or near the ground surface in lands with low paleontological sensitivity and would not have a reasonably foreseeable potential impact on paleontological resources. Construction that involves excavations more than 5 feet deep within the Holocene deposits on valley floor area, or that involves any ground disturbance in older Pleistocene materials along the western margins of the VCIP Plan Area, could result in significant impacts to paleontological resources. The potential impacts to paleontological resources resulting from VCIP implementation would be reduced to less-than-significant levels by implementation of Mitigation Measure GEO-1 at the project-specific level.

Mitigation Measure GEO-1: Protection of Paleontological Resources

To avoid potentially significant impacts to paleontological resources from VCIP implementation, the following mitigation measures are applicable at the project-specific level. The lands subject to development under the VCIP are classified as having either high or low paleontological sensitivity. Therefore, the following mitigation measures are separated into three groups, as follows: a) Measures applicable to all VCIP development; b) Measures applicable to lands with high paleontological sensitivity; and c) Measures applicable to lands with low paleontological sensitivity.

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a) Measures Applicable to All VCIP Development

- i) **Retain Qualified Paleontologist.** Prior to initial ground disturbance, the project proponent shall retain a Qualified Paleontologist, defined as a paleontologist who meets the Society of Vertebrate Paleontology's (SVP) standards.
- ii) **Worker Education and Awareness Program (WEAP) Training.** Prior to commencement of ground disturbing activities for construction, the Qualified Paleontologist or his or her designee, shall conduct WEAP training for construction personnel regarding the appearance of fossils and the procedures for notifying paleontological staff should fossils be discovered by construction staff.
- iii) **Unexpected Fossil Discovery.** In the event of a fossil discovery by construction personnel, all work within 50 feet of the find (the "exclusion zone") shall cease, and the Qualified Paleontologist shall be contacted to evaluate the significance of the resource and make recommendations for the treatment, recovery, and curation of the resource, as appropriate. Work within the exclusion zone shall not recommence until the Qualified Paleontologist has completed the site evaluation and recovery process.

b. Additional Mitigation Measures Applicable Only to Lands with High Paleontological Sensitivity. Some DFA lands along the western margins of the VCIP Plan Area are located within areas where high sensitivity Pleistocene and Plio-Pleistocene deposits are exposed at the ground surface. The following mitigation measures apply to VCIP projects on these lands:

- i) **Prepare Paleontological Resource Management Plan (PRMP).** Prior to the commencement of ground-disturbing activities (i.e., during construction or decommissioning), the Qualified Paleontologist shall prepare a PRMP for the project. The PRMP shall, based upon the site-specific characteristics applicable to each project, establish field reconnaissance methodology; paleontological monitoring procedures; communication protocols to be followed if an unanticipated fossil discovery is made during project development; and preparation, curation, and reporting requirements.
- ii) **Construction/Decommissioning Monitoring.** As recommended by the PRMP, full-time monitoring shall be required during ground-disturbing activities, including visual inspection of excavated or graded areas and trench sidewalls for evidence of fossils. If a paleontological resource is discovered, the monitor shall divert the construction equipment around the find temporarily until it is assessed for scientific significance and collected and the steps described in "a.iii" above shall be implemented. Monitoring efforts can be reduced or eliminated at the discretion of the Qualified Paleontologist if no fossil resources are encountered after initiation of ground disturbing activity.

c. Additional Mitigation Measures Applicable Only to Lands with Low Paleontological Sensitivity. Most of the lands within the VCIP Plan Area are in low sensitivity Holocene-era fan and basin deposits which are underlain by high sensitivity older Pleistocene deposits at depths of at least 5 feet below the ground surface. The following additional mitigation measures apply to VCIP projects on these lands:

- i) **Spot Checking and Construction/Decommissioning Monitoring.** Within these areas, excavations of 5 feet or deeper shall be initially spot checked to determine whether excavations will disturb older alluvial deposits where scientifically important fossils may be present. In the event that

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paleontologically sensitive sediments are observed, full-time monitoring shall be initially implemented for excavations which extend to the depth of the older alluvial deposits. Ground disturbing activity that does not exceed 5 feet in depth shall not require paleontological spot-checking or monitoring. If it is determined that only sediments that are not conducive to fossil preservation would be disturbed by excavation, the monitoring program should be reduced or suspended as recommended by the Qualified Paleontologist. In the event of a fossil discovery, the steps prescribed in “a.iii” above shall be implemented.

Significance After Mitigation: Less-than-significant impact. Project-level application of the above mitigation measures during construction and decommissioning of VCIP energy resource and infrastructure projects would reduce potential impacts related to paleontological resources to-less-than-significant.

4.7.3.2. TRANSMISSION CORRIDORS OUTSIDE THE VCIP

Transmission corridors for delivery of solar generation from VCIP projects to urban electricity markets in northern and southern California have been identified at a conceptual level in this PEIR to allow a general discussion of environmental impacts associated with transmission line development in these corridors for informational purposes. These transmission delivery corridors extend far beyond the District’s boundaries and are not part of the VCIP. Planning and approval of these outside transmission lines are under the jurisdiction of state and federal energy regulatory agencies, public utilities, and cities and counties traversed by the transmission corridors. The following discussion provides an overview of potential impacts of these outside transmission lines with respect to geology, soils, and paleontological resources.

Geology and Soils

The delivery transmission lines extending outside the Plan Area to regional load centers would stretch a total corridor length of approximately 348 miles and would pass through 10 counties with widely varying terrain and geological and soils conditions. The northern transmission corridor would commence on the deep soils of the valley floor and then follow the lower foothills of the Diablo Range for most of its length before entering the valley again in Alameda County. The western transmission corridor would commence on the valley floor and then traverse the Coast Ranges and pass through two small valleys on the way to Moss Landing. The southern transmission corridor would extend south along the valley floor before traversing the Tehachapi Mountains and the Antelope Valley to its terminus near Acton. All of these outside transmission corridors would pass over or alongside existing active earthquake faults and would be subject to potential fault rupture and severe ground shaking, as well as related seismic hazards such as liquefaction, lateral spreading, and seismic settlement. In the mountain areas, the transmission corridors would be subject to potential landslides and soils erosion, and in the valley floor areas, the corridors would be subject to areas with expansive and corrosive soils. The transmission facilities would not require septic systems, so soil suitability for wastewater disposal would not be an issue.

To reduce risks from geologic and soils hazards to acceptable levels, all transmission infrastructure would be routed, designed, and constructed in accordance with seismic engineering and geotechnical soils engineering design specifications in compliance with the IBC and the IEEE standards, as well as construction standards applicable to federal and state regulated utilities, as applicable. All structures would be designed as

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prescribed in project-specific design recommendations by a California-registered professional geotechnical engineer. All construction would be subject to SWPPPs to control erosion and water quality impacts during construction.

Compliance with existing regulations, codes, and standards would ensure that potential geologic and soils hazards and impacts associated with the outside transmission lines would be *less than significant*.

Paleontological Resources

Potential impacts to paleontological resources can occur wherever a fossil-bearing geological formation is exposed at the ground surface or occurs at shallow depths and ground disturbing activities or excavations are planned within these formations. In the valley floor segments of the transmission corridors, the surface material consists of alluvial Holocene-era deposits which were formed too recently to contain fossils. This surface alluvium has a low paleontological sensitivity, but the potential for fossil discoveries increases at depths where the older Pleistocene deposits occur. In the mountain areas of the Coastal Ranges and Tehachapis, the geologic composition is highly variable, and paleontological sensitivity generally ranges from low to high depending on the formation. Construction of the outside transmission lines could result in significant impacts to paleontological resources depending on location.

All outside transmission line projects would be subject to environmental review under CEQA (and NEPA for federal transmission projects), which would involve construction-level evaluation of paleontological resources. These evaluations would be conducted by a qualified professional paleontologist in all cases because all transmission corridors would have at least a low potential for paleontological resources (i.e., at depths below 5 feet in Holocene-era surface deposits), and no corridors will be entirely classified as having “no paleontological sensitivity.” Depending on the sensitivity of the formations affected within any transmission segment, the mitigation measures prescribed would reflect the degree of probability of fossil discovery. These mitigation measures would be the same as or similar to those identified in Mitigation Measure GEO-1 above, which reflect standard, professionally prescribed measures for various conditions of paleontological sensitivity.

In summary, with the evaluation of paleontological sensitivity for each outside transmission project, as required under CEQA (and NEPA where applicable) during project-specific environmental review, and the identification and implementation of appropriate mitigation measures for each project, as required by the approving agencies in each case, the impacts to paleontological resources related to the construction of the outside transmission lines would be *less-than-significant with mitigation*.

4.7.3.3. CUMULATIVE IMPACTS

Geology and Soils

Geologic and soils impacts tend to be highly localized and generally do not extend beyond individual project boundaries. Given the relatively flat terrain of the Plan Area and its 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 boundaries of the Plan Area. Erosion and sedimentation impacts can extend beyond project boundaries to downstream areas within a project’s drainage area. However, as discussed in Section 4.10. *Hydrology and* {00081423.1}

Water Quality, the natural drainage pattern in the Plan Area has been highly engineered and modified such that any stormwater runoff generated within a given project site would be retained within the site and would not flow downstream. Therefore, the geographic scope for the cumulative analysis of geologic and soils impacts is conservatively defined to extend no more than ½ mile beyond the boundaries of the VCIP 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 VCIP implementation.

The potential geology and soils impacts associated with the VCIP energy resource and infrastructure projects, as well as the potential geology and soils impacts associated with other cumulative projects, would be addressed on a site-specific basis for each project in accordance with local building codes and regulations, and state and federal construction standards and requirements (as applicable to the infrastructure projects), as prescribed in the seismic and soils design recommendations by the geotechnical engineers for each project. The vulnerability of each cumulative project to 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 project site or transmission corridor. The specified soil engineering measures would be expected to fully address or avoid all potentially hazardous geologic and soils conditions for each project. Therefore, the cumulative geologic and soils impacts would be *less than significant*, and in any case the contribution to any cumulative impact from VCIP energy resource and infrastructure projects would *not be cumulatively considerable*.

Paleontological Resources

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 VCIP implementation includes the cumulative projects in the western parts of Fresno and Kings Counties as listed in Table 4.0-2 and shown in Figure 4.0-1.

As is the case for the VCIP energy resource and infrastructure projects, the surface soils at almost all of the cumulative project sites consist of Holocene deposits which are too recent to contain fossils. At each site, older Pleistocene deposits, which are known to include vertebrate fossils, underlay the surface materials at varying depths which may be as shallow as five feet beneath the ground surface. While grading and construction activities in the near-surface soils are unlikely to encounter fossils, deeper excavations, trenching and underground construction have the potential to disturb intact paleontological material. Given the potential for impacts to paleontological resources at each cumulative project site, the approvals of those projects did and will include conditions to avoid or mitigate potential paleontological impacts during project grading, excavation, and construction. Like the paleontological mitigation measures identified for the VCIP projects in Mitigation Measure GEO-1 above, required measures include work stoppage and consultation with a qualified paleontologist if fossils are encountered, and requirements for proper handling and curation of any fossils discovered. For each cumulative project, the implementation of these measures would limit potential paleontological impacts to less-than-significant levels. Moreover, with implementation of Mitigation Measure GEO-1 above, the contribution to any cumulative impact from the VCIP energy resource and infrastructure projects *would not be cumulatively considerable*.

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Transmission Corridors Outside the VCIP

Geology and Soils

As discussed above, the outside transmission corridors would be subject to potential geologic hazards such as fault rupture, ground shaking, lateral spreading, liquefaction, seismic settlement, and landslides, as well as soils hazards such as soils expansion, erosion, and corrosivity. Each of the outside transmission projects would be subject to existing regulations, codes, and construction standards which would ensure that these projects are designed to avoid potential impacts related to geologic and soils hazards. Therefore, the geology and soils impact of the outside transmission lines would be less than significant, and the contribution to any cumulative impact would not be considerable. While consideration of cumulative geology and soils impacts of development in the 10 affected counties is beyond the scope of this PEIR, it is reasonable to assume that all cumulative projects would be constructed in accordance with local building codes and other applicable standards and that the cumulative impact would not be significant. Given that the contribution to any geology and soils impact from the outside transmission projects would not be cumulatively considerable, the geology and soils impact of construction of the outside transmission lines would be *cumulatively less than significant*.

Paleontological Resources

As discussed above, the outside transmission lines would traverse lands that range from low to high in paleontological sensitivity. Previously undiscovered fossils could be destroyed by transmission construction projects unless mitigated. Each transmission project would require evaluation for paleontological sensitivity, as required under CEQA (and NEPA as applicable) during project-specific environmental review. With identification and implementation of appropriate mitigation measures for each project, as required by the lead agencies in each case, impacts to paleontological resources resulting from the construction of the outside transmission lines would be less than significant and the contribution to any cumulative impact would not be considerable. Consideration of cumulative paleontological impacts of development in the 10 affected counties is beyond the scope of this PEIR; however, it is reasonable to assume that all cumulative projects proposed in paleontologically sensitive areas would be subject to mitigation measures that would ensure fossil protection and preservation. Moreover, given that the contribution to any paleontological impact from the outside transmission projects would not be cumulatively considerable, as discussed above, the paleontological impact associated with construction of the outside transmission lines would be *cumulatively less than significant*.

4.7.4. References – Geology, Soils, and Paleontological Resources

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4.8. GREENHOUSE GAS EMISSIONS

This section includes the following discussion and analysis related to greenhouse gas emissions: existing environmental and regulatory setting; criteria and methodology for evaluating impacts; and the results of the impact assessment, including identification of potentially significant impacts and corresponding mitigation measures to avoid or substantially lessen such impacts to the extent feasible.

PEIR Scoping Comments

During the PEIR Scoping Process, the District received one letter containing a comment related to greenhouse gas emissions. The comment submitted is quoted below.

Leadership Counsel for Justice and Accountability

“The EIR must include an analysis of any additional greenhouse gas emissions caused by the construction and operation of this and other existing and reasonably foreseeable projects.”

[Note: The analysis of greenhouse gas emissions is contained in Section 4.8.3. *Environmental Impact Analysis* under Impact GHG-1 and GHG-2. Cumulative impacts are addressed in Section 4.8.3.3.]

4.8.1. Environmental Setting

The accumulation of greenhouse gases (GHGs) in the atmosphere is a causative factor in climate change. The release of GHGs creates a layer of gases around the earth which allows sunlight to pass through, but traps heat at the surface, preventing its escape into space. While this is a naturally occurring process known as the greenhouse effect, human activities have accelerated the generation of GHGs beyond natural levels where they are kept in balance by natural processes such as carbon absorption by forests and oceans. These activities, which have been occurring since the beginning of the industrial age, primarily include the emission of CO₂ from combustion of fossil fuels (coal, petroleum, natural gas) in electrical production, transportation, industrial production, and heating. The overabundance of GHGs in the atmosphere has increased the average temperature of the atmosphere near the earth’s surface and resulted in significant changes in global climate patterns. Impacts of climate change include rising sea levels, reductions in Sierra Nevada snowpack, increases in extreme weather events, increased risk of large wildfires, and adverse changes to marine and terrestrial ecosystems.

Some GHGs are naturally occurring and are emitted through natural processes, like organic decay, while others are emitted solely from human activities. The predominant source of human-caused GHG emissions is the use of fossil fuels which produce carbon dioxide (CO₂) as a byproduct of combustion. Other GHGs include methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Each GHG differs in its ability to absorb heat in the atmosphere. The potency of each GHG is measured in terms of “Global Warming Potential” (GWP) over a specific period, relative to CO₂, which has a GWP of 1. High GWP gases include: CH₄ (methane) which has a GWP over 25 times greater than CO₂; and N₂O (nitrous oxide) with a GWP which is 298 times greater than CO₂. The application of these ratios for the various GHGs allows all GHG emissions to be converted to CO₂ equivalents (CO₂e), which allows for an accurate estimate of aggregate greenhouse effect.

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A GHG that is widely used in the electric power industry is sulfur hexafluoride (SF₆), a synthetic gas with an extremely stable molecular structure and excellent insulation qualities. Since the 1950s, the U.S. electric power industry has used SF₆ widely in circuit breakers, gas-insulated substations, and other switchgear used in the transmission system to manage the high voltages carried between generation stations and customer load centers. Fugitive emissions of SF₆ can escape from gas insulated substations and switchgear through seals and can also be released during equipment installation and when equipment is opened for servicing. While SF₆ comprises a small fraction of the total GHGs emitted globally, it is an extremely potent GHG with a global warming potential 22,800 times greater than an equivalent amount of CO₂. SF₆ has an atmospheric lifetime of 3,200 years, compared with a lifetime of less than 10 years for methane, and 200 years for carbon dioxide. As described in Section 4.8.2. *Regulatory Context*, the California Air Resources Board (CARB) has established regulations and programs for the reduction and ultimate phase-out of SF₆ (CARB 2022b).

4.8.2. Regulatory Context

Federal

Mandatory Reporting of Greenhouse Gases Rule

In 2009, the U.S. EPA promulgated the Federal Mandatory Reporting of Greenhouse Gases rule (40 Code of Federal Regulations (CFR) Part 98) to require mandatory reporting of GHGs from large GHG emissions sources. In general, the threshold for reporting is 25,000 metric tons CO₂e (MTCO₂e) or more. No VCIP projects are expected to trigger GHG reporting according to the rule; however, GHG emissions resulting from VCIP implementation are quantified in this PEIR.

State of California

California Greenhouse Gas Bill (AB 1493)

The “California Greenhouse Gas Bill” (AB 1493 Pavley), signed into law in July 2002, required CARB to develop and adopt regulations that achieve maximum feasible reduction of GHGs emitted by passenger vehicles and light-duty trucks. In response, CARB adopted landmark regulations in 2004 limiting GHG emissions from new vehicles sold in California beginning in the 2009 model year. New vehicles complying with this regulation consume nearly 30 percent less fuel than vehicles built before 2009 (Health and Safety Code, sections 42823, 43018.5).

California Global Warming Solutions Act (AB 32)

To mitigate the consequences of climate change, the California Legislature (Legislature) passed the California Global Warming Solutions Act (AB 32) in 2006. AB 32 established a state goal of reducing GHG emissions to 1990 levels by 2020 (a reduction of approximately 25 percent from forecast emissions levels), and required CARB to prepare a Scoping Plan that establishes a comprehensive program to implement this goal. In 2016, the Legislature passed SB 32, which extended the goals of AB 32 and set a 2030 goal of reducing 2030 emissions by 40 percent from 2020 levels. In 2022, the legislature passed AB 1279, which establishes the policy of the state to achieve carbon neutrality by 2045, and to ensure that GHG emissions by that year are reduced at least 85 percent below 1990 levels. The AB 32 Scoping Plan has gone through four iterations as legislative mandates have evolved, with the latest being the 2022 Scoping Plan which provides the framework {00081387.1}

for achieving carbon neutrality by 2045, and which identifies policies and strategies that enable CO2 removal solutions and carbon capture, utilization, and storage (CCUS) technologies (CARB 2022b).

Renewables Portfolio Standard (RPS)

One of the key implementation programs under AB 32 is the Renewables Portfolio Standard (RPS) which has undergone several iterations mandating that renewable generation sources comprise an ever-increasing share of electrical utilities' total power generation by certain target dates. Qualifying renewable generation sources include solar, wind, small hydro, geothermal, and biomass. In September 2018, Governor Brown signed SB 100, which increased the required renewables content of electricity generation to 50 percent by 2025 and 60 percent by 2030, and which puts California on the path to implement a zero-carbon electricity grid by 2045. In September 2022, these targets were revised by SB 1020, which requires the following: 90 percent renewables or zero carbon content of all electricity sales in California by the end of 2035; 95 percent renewables content of electricity by 2040; and 100 percent renewables content of electricity consumed by state agencies by the end of 2035. SB 1020 also codifies the goal stated in SB 100 of achieving 100 percent renewables content by 2045.

In 2023, renewable energy sources, including biomass, geothermal, small-scale hydro, solar, and wind, accounted for an estimated 35.3 percent of California's power mix, with utility-scale solar generation accounting for 18.3 percent of the state's power mix (CEC 2024e). During the same year, fossil fuel energy sources – primarily natural gas with minor quantities of coal and oil – accounted for an estimated 43.8 percent of the state's power mix. Considering the discussion regarding AB 2661 (2024) below, it is anticipated that implementation of renewable energy projects under the VCIP would reduce reliance on fossil fuels for electricity generation.

Electricity: Westlands Water District (AB 2661)

In recognition of “the unique need of the Westlands Water District to support the development of solar electrical generation for the electrical grid and to facilitate the development of transmission capacity to help California reach its clean energy and climate goals,” the Legislature enacted AB 2661 in 2024. The act, among other things, authorizes the District to: (1) provide, generate, and deliver solar photovoltaic electricity, and construct, operate, and maintain any and all works, facilities, improvements, and property, or portions thereof, necessary or convenient for generating and delivering that electricity; (2) construct, operate, and maintain an energy storage system, as defined in section 2835 of the Public Utilities Code, and all works, facilities, improvements, and property, or portions thereof, necessary or convenient for the operation of an energy storage system, within the boundaries of the District; and (3) construct, operate, and maintain electrical transmission lines and all works, facilities, improvements, and property, or portions thereof, necessary or convenient for the conveyance of electricity within the boundaries of the District (Wat. Code, section 37860(b)-(d)).

Cap-and-Trade Program

CARB administers the state's Cap-and-Trade Program, which covers GHG sources that emit more than 25,000 MTCO₂e per year, such as refineries, power plants, and industrial facilities. This market-based approach to reducing GHG emissions provides economic incentives for achieving GHG emission reductions (CARB 2025a).

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Low Carbon Fuel Standard

The Low Carbon Fuel Standard (LCFS), established in 2007 by Executive Order S-1-07 and administered by CARB, requires producers of petroleum-based fuels to reduce the carbon intensity of their products, starting with a 0.25-percent reduction in 2011 and culminating in a 10-percent reduction by 2020. Petroleum importers, refiners, and wholesalers can either develop their own low carbon fuel products, or buy LCFS credits from other companies that develop and sell low carbon alternative fuels, such as biofuels, electricity, natural gas, and hydrogen.

Executive Order N-79-20

EO N-79-20 (September 23, 2020) sets the following goals for the state: 100 percent of in-state sales of new passenger cars and trucks shall be zero-emission by 2035; 100 percent of medium and heavy duty vehicles in the state shall be zero-emission by 2045 for all operations where feasible and by 2035 for drayage trucks; and 100 percent of off-road vehicles and equipment in the state shall be zero-emission by 2035, where feasible.

Senate Bill 375

The Sustainable Communities and Climate Protection Act of 2008 (SB 375) supplements GHG reductions from new vehicle technology and fuel standards with reductions from more efficient land use patterns and improved transportation. Under the law, CARB approved GHG-reduction targets in February 2011 for California's 18 federally designated regional planning bodies, known as Metropolitan Planning Organizations (MPOs). In 2018, CARB adopted updated regional targets for reducing GHG emissions from 2005 levels by 2020 and 2035. The Fresno Council of Governments (FCOG) was assigned targets of a 6 percent reduction in per capita GHG emissions from passenger vehicles by 2020 and a 13 percent reduction in per capita GHG emissions from passenger vehicles by 2035 (CARB 2018).

Senate Bill 743

California Senate Bill 743 (SB 743), which went into effect in January 2014, states that “[n]ew methodologies under the California Environmental Quality Act are needed for evaluating transportation impacts that are better able to promote the state’s goals of reducing greenhouse gas emissions and traffic-related air pollution, promoting the development of a multimodal transportation system, and providing clean, efficient access to destinations.” SB 743 shifted the focus of required transportation analyses from driver delay, which is typically measured by traffic level of service (LOS), to a new measurement – vehicle miles traveled (VMT). This change in metrics is intended to further the state’s long-term greenhouse gas reduction goals by reducing fuel consumption in the transportation sector, specifically through reductions in per capita VMT associated with new land use projects, and thereby promoting compact, mixed-use development patterns.

California Air Resources Board

CARB is the state air pollution control agency charged with protecting the public from the harmful effects of air pollution and developing programs and actions to fight climate change.

California Mandatory Greenhouse Gas Reporting Regulation

Pursuant to AB 32, CARB adopted the California Mandatory Greenhouse Gas Reporting Regulation (17 California Code of Regulations (CCR), sections 95100-95133). The facilities that are required to annually report their GHG emissions include electricity-generating facilities, electricity retail providers and power marketers,

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oil refineries, hydrogen plants, cement plants, cogeneration facilities, and industrial sources that emit over 25,000 MT/year of CO₂ from combustion. In addition, retail providers of electricity are required to report fugitive emissions of SF₆ related to transmission and distribution systems, substations, and circuit breakers located in California that the retail provider or marketer is responsible for maintaining in proper working order (CARB 2019).

CARB's Regulation for Reducing Sulfur Hexafluoride (SF₆) Emissions

In 2010, CARB adopted regulations which require switchgear owners to reduce their SF₆ emission rates, reaching a 1 percent emission rate by 2020. The purpose of this regulation is to achieve GHG emission reductions by reducing SF₆ emissions from gas-insulated switchgear. Owners must regularly inventory gas-insulated switchgear equipment, measure quantities of SF₆, and maintain records of these for at least 3 years. In recognition of considerable progress made since 2010 in developing alternatives to SF₆, CARB amended the regulation in 2021 to phase out the use of SF₆ altogether (CARB 2025b). The new phase out schedule begins in January 2025, with all switchgear needing to be SF₆ free by January 2033 (17 CCR, section 95352). These regulations would apply to any switchgear equipment containing SF₆ which may be installed within potential VCIP projects (CARB 2025h).

California Green Building Code

The California Green Building Code (CALGreen) (24 CCR, part 11), commonly referred to as CALGreen, establishes minimum mandatory standards as well as voluntary standards pertaining to the planning and design of sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and interior air quality. The CALGreen standards took effect in January 2011 and instituted mandatory minimum environmental performance standards for all ground-up, new construction of commercial, low-rise residential, and state-owned buildings, schools, and hospitals. Updated CALGreen standards are published every three years by order of the Legislature. The CALGreen 2022 standards became effective on January 1, 2023 (CBSC 2023)(see Section 4.17. *Utilities and Service Systems* for additional information).

Regional

San Joaquin Valley Air Pollution Control District (SJVAPCD)

Under its mandate to provide local agencies with assistance in complying with CEQA in climate change matters, SJVAPCD developed *Guidance for Valley Land-Use Agencies in Addressing GHG Emissions Impacts for New Projects under CEQA* (SJVAPCD Guidance). As a general principle, the SJVAPCD Guidance states that to demonstrate a less-than-significant impact related to global climate change, a project must be determined to have reduced or mitigated GHG emissions by 29 percent relative to Business-As-Usual conditions. Under the SJVAPCD Guidance, a project that meets this emissions reduction target is considered to meet the 29 percent statewide GHG emission reduction target established in CARB's Scoping Plan for AB 32 implementation (SJVAPCD 2015c). However, use of the SJVAPCD's 29 percent reduction metric was substantially limited by the California Supreme Court's 2015 Newhall Ranch decision (*Center for Biological Diversity v. California Department of Fish and Wildlife* (2015) 62 Cal.4th 204). While the 29 percent reduction is the statewide goal under AB 32, the court found no substantial evidence to support a nexus between the statewide goal and the percent reduction that a specific land use project would need to achieve in order to be consistent with the

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goals of AB 32. Therefore, if specific percentage reduction targets are to be applied, they must be demonstrably applicable to the land use type proposed.

2022 Regional Transportation Plan/Sustainable Communities Strategy

In July 2022, the FCOG adopted the 2022 Regional Transportation Plan/Sustainable Community Strategy (RTP/SCS), which is a long-range planning document that provides the framework for investments in roads, freeways, public transit, bikeways and other ways people move around Fresno County for the next 25 years. Each metropolitan planning organization is required to prepare an SCS pursuant to SB 375 (2008) (see above). The primary goal of each SCS is to reduce regional VMT and, as a result, reduce GHG emissions associated with mobile sources (FCOG 2022).

Fresno County

Fresno County General Plan

The Fresno County General Plan (Fresno County 2024) includes the following goals and policies related to GHG emissions which are relevant to the VCIP. In addition, implementation of General Plan policies related to air quality (see Section 4.3.2. *Air Quality*) would result in reductions in GHG emissions.

Health and Safety Element

G. Adaptation and Resiliency

Goal HS-G	To improve the sustainability and resiliency of the County through continued efforts to reduce the causes of and adapt to climate change.
Policy HS-G.1	Reduce Impacts of Climate Change The County shall support plans, standards, regulation, incentives, and investments based on sound science to reduce the impacts of climate change.
Policy HS-G.3	Collaborate on Climate Adaptation The County shall continue to collaborate with Federal, State, regional, and local agencies, business and property owners, and residents to reduce generation of GHG and other emissions that contribute to climate change and effectively implement climate change adaptation policies and programs.

4.8.3. Environmental Impact Analysis

METHODOLOGY

This section analyzes the potential for implementation of the VCIP to result in significant environmental impacts related to GHG emissions. The evaluation of potential GHG emissions resulting from the VCIP implementation is based on the GHG emissions estimates for the VCIP prepared by Illingworth & Rodkin (see Appendix B of this PEIR). The analysis considers the estimated GHG emissions and evaluates the offsetting effects of the production

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of a clean energy source by VCIP solar projects compared with conventional fossil-fueled electrical generation, which currently accounts for approximately 40 percent of electricity generation in California.

SIGNIFICANCE CRITERIA

Based on Appendix G of the state CEQA Guidelines, implementation of the VCIP would be considered to result in a significant impact related to GHG emissions if it would:

- a. Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.
- b. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

4.9.3.1. DIRECT AND INDIRECT EFFECTS

Impact GHG-1. Greenhouse Gas Emissions

Implementation of the VCIP Energy Resource and Infrastructure Plans would result in the generation of greenhouse gas emissions, both directly and indirectly, during construction, operation, and decommissioning. However, the GHG emissions resulting from VCIP implementation would be vastly outweighed by the GHG emission reductions and substantial net benefit related to global climate change resulting from the clean power generation and storage provided by VCIP solar and energy storage projects. (*Less-than-Significant Impact*)

Introduction

The emission of GHGs 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, increased frequency and severity of wildfires, 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 (see, e.g., *Center for Biological Diversity v. Department of Fish & Wildlife* (2015) 62 Cal.4th 204, 219; *Cleveland National Forest Foundation v. San Diego Assn. of Governments* (2017) 3 Cal.5th 497, 512). However, the GHG emissions from each development project results in an incremental contribution related 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 (CEQA Guidelines, section 15064.4(b); *Upland Community First v. City of Upland* (2024) 105 Cal.App.5th 1, 15 [“[a] project's impacts on global GHG emissions and climate change are necessarily cumulative impacts”]).

As such, a significant impact would occur if a project’s incremental addition of GHG emissions is a considerable contribution to the cumulatively significant impacts resulting from global climate change (*Center for Biological Diversity v. Department of Fish & Wildlife* (2015) 62 Cal.4th 204, 219; *Cleveland National Forest Foundation v.*

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San Diego Assn. of Governments (2017) 3 Cal.5th 497, 512). In determining the significance of a project's GHG emissions, CEQA Guidelines section 15064.4(b), provides that an agency's analysis should: 1) consider a timeframe that is appropriate for the project; 2) reasonably reflect evolving scientific knowledge and state regulatory schemes; 3) consider the extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting; 4) consider whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project; and 5) consider the extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions.

VCIP Energy Resource and Infrastructure Plan

Energy and infrastructure projects developed under the VCIP would generate GHG emissions through direct consumption of fossil fuels, primarily related to equipment operation during construction, traffic generation, and facility maintenance. The GHG emissions resulting from VCIP project construction, operation and decommissioning were estimated by Illingworth & Rodkin using the California Emissions Estimator Model (CalEEMod) (see Table 12 in Appendix B of this PEIR). The estimated emissions from VCIP implementation are summarized in Table 4.8-1. The calculations include emissions from the solar generation and BESS facilities, gen-tie lines, collection substations, and connecting transmission lines. As shown in the table, annual average GHG emissions would be the equivalent of approximately 59,617 MTCO₂e per year. The operation of VCIP solar and energy storage facilities would result in very low GHG emissions, given the small number of permanent operations staff, and the fact that fuel-consumptive operational activities mainly consist of facility maintenance, not electrical energy generation. The VCIP infrastructure would result in negligible GHG emissions given the lack of permanent staff and infrequent visits by personnel for inspection, maintenance and repair.

To calculate annual average GHG emissions, the emissions from VCIP project construction activities and the post-project decommissioning activities are amortized over the 35-year operational life anticipated for each VCIP facility, and added to operational emissions, as shown in Table 4.8-1.

TABLE 4.8-1
ESTIMATED PROJECT GREENHOUSE GAS EMISSIONS

Project	Construction & Decommissioning Emissions (MTCO ₂ e) ¹			Annual Emissions (MTCO ₂ e)		
	Construction Emissions (Total)	Decommissioning Emissions (Total) ²	Total Construction/Decommissioning Emissions	Construction/Decommissioning (Amortized) ³	Project Operation	Total Annual Emissions
VCIP Totals	968,593	968,593	1,937,186	55,348	4,269	59,617

¹ MTCO₂e = Metric Tons CO₂ Equivalent

² Decommissioning emissions would likely be less than construction emissions, but are assumed to be same for purposes of this analysis. Source: Illingworth & Rodkin 2025.

³ VCIP solar and energy storage facilities are anticipated to have a useful life of 35 years.

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As discussed in Section 4.8.1. *Environmental Setting*, small amounts of SF₆ commonly used as an insulating gas in substation switchgear can leak through seals and can also be released during equipment installation and when equipment is opened for servicing. While SF₆ comprises a small fraction of the total GHGs emitted globally, it is an extremely potent GHG with a global warming potential 22,800 times greater than an equivalent amount of CO₂. As discussed in Section 4.8.2. *Regulatory Setting*, CARB has promulgated regulations for the phase-out of all equipment containing SF₆ or “gas-insulated switchgear” (GIE) by 2033, with GIE to be phased out in 230-kV switchgear by 2028. By the time the first VCIP substation would be planned for construction in 2028, it is expected that SF₆-free electrical equipment will be widely available for procurement. Engineering plans for substations that would be constructed under the VCIP have not been developed. Thus, there is currently insufficient information to provide any meaningful emissions calculations that reliably forecast reasonably foreseeable emissions. However, it is expected that VCIP projects would utilize switchgear that would be entirely or mostly SF₆-free, and thus any emissions associated with the substations are anticipated to be insubstantial.

Upon completion, full buildout of the contemplated VCIP solar facilities would have a total generating capacity of 21,000 megawatts (MW), which would generate approximately 33,484,500 megawatt hours per year (MWh/yr), which is based on the 2023 average generation of 1,594.5 MWh/MW from the five largest solar operating solar facilities in Fresno County (CEC 2024e). This is equivalent to the average electrical consumption of 5,683,045 California homes in 2023 (at 5,892 kilowatt-hours per year [kWh/yr] per home) (US EIA 2024a). This electric power would be dispatched to the California Independent System Operator (CAISO) in accordance with a complex and dynamic formula that considers numerous variables in ongoing dispatching decisions to meet demand for electricity at any given time. One of those variables is compliance with the mandates to integrate electricity generated from renewable sources into the system at a predetermined rate, i.e., 60 percent renewables by 2030, 90 percent by 2035, 95 percent by 2040, and 100 percent by 2045 as mandated by SB 100 and SB 120. Therefore, relative to existing conditions, additional renewable sources of electricity, such as solar generation, are considered to offset or displace an equivalent amount of generation from other fuel sources, such as natural gas or coal. In other words, installation and operation of solar facilities, like those proposed to be developed under the VCIP, would displace an equivalent amount of fossil-based generation, and hence would result in a net reduction in overall CO₂ emissions, relative to overall CO₂ emissions that would occur without the project.

To quantify the amount of displacement of CO₂ emissions due to VCIP implementation, the CO₂ emissions from fossil-fueled plants with the same aggregate electrical output were considered for comparison. The average carbon intensity for Pacific Gas and Electric (PG&E) natural gas fueled power plants was 0.402 MTCO₂e/MWh in 2021 (latest year data available) (PG&E 2022). Based on this PG&E emissions factor, a natural gas-fired plant generating 33,484,500 MWh/yr (the equivalent of all the VCIP solar facilities at full operation) would produce annual GHG emissions of approximately 13,460,769 MTCO₂e/yr.¹ Compared to the GHG annual emissions of 59,617 MTCO₂e/yr from VCIP facilities shown in Table 4.8-1 (i.e., 0.0018 MTCO₂e/MWh for VCIP solar vs. 0.402 MTCO₂e/MWh for PG&E gas-fired plants), the annual emissions from gas-fired power plants would be approximately 223 times greater. Under full buildout, the VCIP solar facilities would represent an annual net

¹ In 2023, there was a total generation of 94,192 gigawatt-hours per year (GWh/yr) from natural gas fuel sources, which equates to 94,192,000 MWh/yr in California (CEC 2024e). This greatly exceeds the maximum amount of electricity that would be generated under the VCIP and highlights the need for substantial offsets to meet the state’s renewables targets. Thus, it is reasonably foreseeable that all dispatched renewable electricity generated by potential VCIP projects would offset electricity generated by natural gas and other fossil-fuel power plants, thereby offsetting the rate of associated GHG emissions compared to existing conditions.
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reduction of 13,401,152 MTCO₂e/yr, or a 99.5 percent net reduction in GHG emissions compared to the natural gas fueled alternative.

In summary, while the VCIP energy and infrastructure projects would result in a relatively low level of GHG emissions during project construction and decommissioning, the near-zero emissions from electrical generation during solar facilities operation would result in displacement of an equivalent amount of fossil-fueled generation, representing a substantial net reduction of overall GHG emissions from electricity generation in California. Therefore, VCIP implementation would have a beneficial effect in terms of GHG emissions and the impact would be *less than significant*.

Impact GHG-2. Conflict with GHG Reduction Plans

Implementation of the VCIP Energy Resource and Infrastructure Plans would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs. (No Impact)

At the state level, the determination of significance under this criterion is based on whether the project would hinder or delay implementation of the statewide GHG reduction targets set forth in AB 32 and its successor legislation and regulations. The state's strategies for achieving the mandated GHG emissions reduction targets are outlined in the 2022 Climate Change Scoping Plan adopted by CARB. One of the key strategies is the RPS, which currently requires all electric utilities in California to include a minimum of 60 percent renewable generation sources in their overall energy mix by 2030, with the target increasing thereafter in five-year increments, reaching 100 percent renewables by 2045. The VCIP solar projects would help increase the proportion of renewables in the statewide energy portfolio, thereby furthering the implementation of RPS by the target years instead of hindering or delaying its implementation. In enacting AB 2661, the Legislature recognized "the unique need of the Westlands Water District to support the development of solar electrical generation for the electrical grid and to facilitate the development of transmission capacity to help California reach its clean energy and climate goals." While not counted as renewable generation under RPS, the VCIP energy storage facilities would maintain the supply of renewable energy during peak evening demand periods and when solar generation diminishes due to lack of sunlight. The addition of the VCIP solar generation to the state's electrical supply would help facilitate the retirement of existing older fossil-fueled generation plants, thereby avoiding or displacing those sources of GHG emissions, and the VCIP battery facilities would store renewable energy for additional grid support during peak demand periods. Therefore, the VCIP would not conflict with CARB's 2022 Climate Change Scoping Plan.

The Fresno County General Plan includes several policies which address climate change, including Health and Safety Policy HS-G.1 which states: "[t]he County shall support plans, standards, regulation, incentives, and investments to reduce the impacts of climate change;" and Policy HS-G.3 which states: "[t]he County shall continue to collaborate with Federal, State, regional, and local agencies, business and property owners, and residents to reduce generation of GHG and other emissions that contribute to climate change and adapt to potential effects of climate change" (Fresno County 2024). The VCIP solar projects would advance the implementation of these policies by providing new sources of renewable energy, thereby helping to reduce

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overall GHG emissions and reducing the impacts of climate change. Therefore, the VCIP would not conflict with the Fresno County General Plan.

In summary, the implementation of the VCIP Energy Resource and Infrastructure Plans would not conflict with applicable local plans, policies, or regulations adopted for the purpose of reducing the emissions of GHGs, and thus would have *no impact* in this regard.

4.8.3.2. TRANSMISSION CORRIDORS OUTSIDE THE VCIP

The transmission corridors for delivery of solar generation from potential VCIP projects to urban electricity markets in northern and southern California have been identified at a conceptual level in this PEIR to allow a general discussion of environmental impacts associated with transmission line development for informational purposes. These transmission delivery corridors extend far beyond the District's boundaries and are not part of the proposed VCIP. Planning and approval of these outside transmission lines are under the jurisdiction of the state and federal energy regulatory agencies, and public utilities. The following discussion provides an overview of potential impacts of the outside transmission lines with respect to GHG emissions.

The outside transmission lines would result in GHG emissions during construction but would have negligible emissions during operation. Based on an emissions factor of approximately 1,000 MTCO₂e per mile of transmission line, the construction of 549 line miles of outside transmission lines would result in total GHG emissions of approximately 549,000 MTCO₂e over the 10-year construction period. The construction emissions would be amortized over 35 years, for an annual emissions rate of 15,686 MTCO₂e/yr.² It is anticipated that the outside transmission lines would be constructed as several projects, the longest of which would be the 177-mile-long transmission line extending south from VCIP Substation 5 to the Vincent Substation located in northern Los Angeles County. The GHG emissions from construction of this southern corridor would total approximately 5,057 MTCO₂e/yr, as amortized. In the absence of a "bright line" emissions threshold from SJVAPCD, the emissions were compared to the threshold applied by the South Coast Air Quality Management District (SCAQMD) of 10,000 MTCO₂e/yr. The southern transmission corridor emissions fall well below this threshold, as would the other outside transmission line projects since they are shorter. Thus, despite the absence of construction details given the conceptual nature of the outside transmission corridors, it is concluded that the construction of the outside transmission line projects would not result in significant GHG emissions.

The purpose of the outside transmission corridors is to provide California's major population centers with access to the VCIP's renewable energy sources, thus reducing the state's dependence on non-renewable generation sources. As such, the outside transmission lines would be instrumental in facilitating displacement of fossil fuel generation, and would indirectly result in a substantial net reduction in GHG emissions as provided by VCIP solar facilities, quantified under Impact GHG-1. Therefore, the outside transmission lines would help advance the state goals of achieving carbon neutrality in the state's electrical grid by 2045.

² While the outside transmission lines would not be decommissioned and would be expected to have an operational life of over 35 years, a 35-year amortization period is conservatively used for consistency and for informational purposes. {00081387.1}

In summary, the outside transmission lines would not have a significant impact with regard to GHG emissions, and would be consistent with state goals and mandates for reducing GHG emissions.

4.8.3.3. CUMULATIVE IMPACTS

As discussed above, the VCIP's solar generating and energy storage facilities would comprise and facilitate the use of a renewable source of energy which will help displace an equivalent amount of existing fossil-based generation. The construction, operation, and decommissioning of the VCIP energy and infrastructure facilities would generate some GHG emissions from fossil-fueled vehicles and equipment; however, the substantial offset of fossil-fueled electrical generation represented by the VCIP solar projects would greatly outweigh the small amount of fossil fuels consumed in project construction and decommissioning. The cumulative projects considered in this analysis are listed in Table 4.0-2 and shown in Figure 4.0-1, which encompasses all cumulative projects within the Plan Area and those within a 10-mile radius of the Plan Area.³ Based on GHG estimates for the individual cumulative projects, it is calculated that the cumulative projects would result in total annual GHG emissions of approximately 90,344 MTCO₂e/yr. Since solar projects represent over 96 percent of the cumulative projects by acreage, the emissions displaced by the solar projects would far outweigh the total cumulative emissions. It is estimated that the 4,755 MW of solar generation by the cumulative projects would generate 7,581,848 MWhr/yr, which would displace a total of approximately 3,047,902 MTCO₂e/yr, which would offset the cumulative project GHG emissions by a factor of 34. With the addition of the 21,000 MW of potential VCIP solar projects (with a net GHG reduction of 14,527,281 MTCO₂e/yr), the total cumulative net reduction in GHG emissions is 17,575,183 MTCO₂e/yr, which would offset the total cumulative GHG emissions from all cumulative projects (including the 59,617 MTCO₂e/yr VCIP projects) by a factor 118 annually.

By conveying the renewable energy from the VCIP to the state's load centers, the outside transmission lines would contribute to the net GHG reductions facilitated by the VCIP solar projects, as discussed in Section 4.8.3.2 above. As such, the GHG impacts of the outside transmission lines would be beneficial overall, and their contribution to any cumulative effect would not be considerable.

In summary, the GHG emissions from the construction, operation, and decommissioning of the cumulative projects, including the VCIP energy and infrastructure projects, would be more than offset by the displaced GHG emissions resulting from the renewable electricity they would generate. Since the cumulative projects would facilitate the avoidance of substantial existing fossil-fueled power generation, they would collectively result in a substantial net reduction in overall GHG emissions. As discussed under Impact GHG-2 for the potential VCIP projects, the other cumulative projects would also be consistent with applicable plans, policies, and regulations adopted for the purpose of reducing emissions of GHGs. Therefore, the *cumulative impact would be less than significant, and the contribution from VCIP projects would not be cumulatively considerable.*

³ Table 4.0-2 and Figure 4.0-1 include a total of 72 cumulative projects; however, four of these projects comprise solar/BESS projects within the VCIP DFAs. Since the plan level impacts of the DFAs, including these projects, are addressed in the main impact analysis sections of this PEIR, they are not addressed again in the cumulative analyses. {00081387.1}

4.8.4. References – Greenhouse Gas Emissions

CARB 2018	California Air Resources Board (CARB). March 2018. <i>SB 375 Regional Plan Climate Targets</i> . https://ww2.arb.ca.gov/our-work/programs/sustainable-communitiesprogram/sb-375-regional-targets
CARB 2019	California Air Resources Board (CARB). February 2019. <i>Reporting Guidance for Determining Rule Applicability for California’s Mandatory GHG Reporting Program</i> . https://ww2.arb.ca.gov/sites/default/files/classic/cc/reporting/ghg-rep/guidance/applicability-general.pdf
CARB 2022b	California Air Resources Board (CARB). November 2022. <i>The 2022 Scoping Plan for Achieving Carbon Neutrality</i> . https://ww2.arb.ca.gov/sites/default/files/2022-12/2022-sp_1.pdf
CARB 2025a	California Air Resources Board (CARB). <i>Cap-and-Trade Program</i> . Accessed April 22, 2025. https://ww2.arb.ca.gov/our-work/programs/cap-and-trade-program
CARB 2025b	California Air Resources Board (CARB). <i>Electricity Transmission and Distribution Greenhouse Gas Emissions</i> . Accessed April 22, 2025. https://ww2.arb.ca.gov/our-work/programs/elec-tandd
CARB 2025h	California Air Resources Board (CARB). <i>Regulation for Reducing Sulfur Hexafluoride Emissions from Gas Insulated Switchgear</i> . Accessed April 22, 2025. https://ww2.arb.ca.gov/rulemaking/2020/sf6
CBSC 2023	California Building Standards Commission (CBSC). 2022. <i>2022 California Green Building Standards Code</i> , California Code of Regulations, title 24, part 11 (“CALGreen Code”). https://www.dgs.ca.gov/BSC/CALGreen#codes
CEC 2024e	California Energy Commission (CEC). December 2024. <i>Data and Reports – Electric Generation Capacity and Energy</i> . https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/electric-generation-capacity-and-energy
FCOG 2022	Fresno County Council of Governments (FCOG). July 2022. <i>Fresno COG’s 2022 Regional Transportation Plan and Sustainable Communities Strategy (2022 RTP/SCS)</i> . https://www.planfresno.com/sustainable-communities-strategies-fall-outreach/
Fresno County 2024	Fresno County. February 2024. <i>Fresno County General Plan Policy Document, Final</i> . https://www.fresnocountyca.gov/files/sharedassets/county/v/1/public-works-and-planning/development-services/planning-and-land-use/general-plan/fcgpr_general-plan_county_final_2024_02.pdf
I&R 2025 {00081387.1}	Illingworth & Rodkin (I&R). April 2025. <i>Valley Clean Infrastructure Plan– Program-Level Air Quality Assessment</i> . [Contained in Appendix B of this document.]

PG&E 2022	Pacific Gas & Electric (PG&E). 2022. <i>2022 Corporate Sustainability Report</i> . https://sustainabilityreports.com/reports/pg-e-corp-2022-corporate-sustainability-report-pdf/
SJVAPCD 2015c	San Joaquin Valley Air Pollution Control District (SJVAPCD). March 2015. <i>Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI)</i> . https://ww2.valleyair.org/media/g4nl3p0g/gamaqi.pdf
US EIA 2024a	U.S. Energy Information Administration (EIA). December 2024. <i>2023 Electric Retail Sales - Residential</i> . https://www.eia.gov/electricity/sales_revenue_price/pdf/table5_a.pdf [Must copy/paste link to browser search bar, then select T5.a.]

4.9. HAZARDS AND HAZARDOUS MATERIALS

This section includes the following discussion and analysis related to hazards and hazardous materials: existing environmental and regulatory setting; criteria and methodology for evaluating impacts; and the results of the impact assessment, including the identification of significant impacts and corresponding mitigation measures to avoid or substantially lessen such impacts to the extent feasible, as appropriate.

PEIR Scoping Comments

During the PEIR scoping process, the District received two letters containing comments related to hazards and hazardous materials. The comments submitted are summarized below (see PEIR Scoping Report in Appendix A of this document for copies of comments received).

California Department of Conservation, Geologic Energy Management Division (CalGEM)

The comment letter indicates that the Plan Area is within the boundaries of several oil and gas fields and includes 421 known oil or gas wells. CalGEM advises against building over, or in any way impeding access to, oil, gas, or geothermal wells. Maintaining sufficient access is considered the ability for a well servicing unit and associated necessary equipment to reach a well from a public street or access way over the parcel on which the well is located. CalGEM advises that all wells on the project sites be tested for liquid and gas leakage prior to or during development activities. Additional detailed requirements and recommendations regarding wells located within planned development areas are included in the comment letter.

Potential impacts associated with oil and gas wells are addressed below in Section 4.9.3. *Environmental Impact Analysis* under Impact HAZ-5.

Leadership Counsel for Justice and Accountability

The comment letter requests an analysis of any hazardous materials and solid waste generated by construction and operation of the project, including the movement and disposal of these materials both on and off-site and any threats to human health or the environment from these materials, and including the potential for fires associated with energy storage and transmission.

[Potential hazards and hazardous materials impacts are addressed below in Section 4.9.3. *Environmental Impact Analysis* under Impacts HAZ-1 through HAZ-8. Potential solid waste impacts are addressed in Section 4.17. *Utilities and Service Systems*. Potential fire impacts are addressed in Sections 4.14. *Public Services* and 4.18. *Wildfire*.]

The commenter requests analysis of the risk of causing heat island effects and requests incorporation of mitigation measures to protect residents and the community at large from extreme heat.

[The potential for solar photovoltaic (PV) facilities to result in heat island effects is discussed below in Section 4.9.3. *Environmental Impact Analysis* under Impact HAZ-10.]

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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 (CCR, Title 22, section 66260.10 and Health and Safety Code section 25501).

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 Title 22 of the CCR, 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.

4.9.1. Environmental Setting

4.9.1.1. SOURCES OF HAZARDS AND HAZARDOUS MATERIALS

Hazardous Waste Generators

Many industries and commercial facilities generate hazardous waste as part of their processes and operations. The U.S. EPA regulates hazardous waste under the Resource Conservation and Recovery Act (RCRA) to ensure these wastes are managed in ways that protect human health and the environment. Generators of hazardous waste are regulated based on the amount of hazardous waste they generate in a calendar month, not the size of their business or facility. Within the Plan Area, there are four hazardous waste generators, all of which are small quantity generators (i.e., generate less than 100 kilograms per month of hazardous waste or less than one kilogram of acutely hazardous waste). These include two fertilizer plants, one cotton gin, and one water treatment plant. One fertilizer plant and the cotton gin are located adjacent to Development Focus Areas (DFA) lands, while the other two generators are at least one mile from the nearest DFA lands, and at least a half mile from the VCIP connecting transmission corridor. These generators are subject to regulatory oversight by the U.S. EPA and have no open cases of uncontrolled discharges of hazardous materials (Cal EPA 2025).

Hazardous Materials Contamination Sites

Uncontrolled discharges of hazardous materials have the potential to result in adverse impacts related to soil and groundwater quality. Contaminant sources include leaking above-ground fuel storage tanks (ASTs), underground storage tanks (LUSTs), petroleum product pipelines, or accidental spills of fuels or other hazardous materials. Hazardous contamination sites exist throughout Fresno County, including several existing within the Plan Area. Hazardous contamination cases are administered by various agencies (described below in Section 4.9.2. *Regulatory Context*) including the California Department of Toxic Substances Control (DTSC) and the State Water Resources Control Board (SWRCB). Both agencies track contamination cases and maintain the publicly accessible EnviroStor (aka Cortese List) and GeoTracker databases, respectively, which provide the

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cleanup status for contamination cases. Within the Plan Area (excluding cities and NAS Lemoore), there are four open contamination cases subject to regulatory action. These include the following: 1) Bullard Avenue Airstrip; 2) Airway Farms – Five Points Ranch Shop; 3) TMT Chemical Company on Oakland Avenue; and 4) Airway Farms Duster Ranch near Huron. Two of these sites (Bullard Airstrip and Airway Farms – Five Points Ranch Shop) are adjacent to potential DFAs, while the remaining two sites are at least one mile from the nearest potential DFA (DTSC 2025b, SWRCB 2025). The cleanup status for all four sites is summarized below based on information from EnviroStor and GeoTracker databases.

Former Bullard Avenue Airstrip

Location: North side W. Bullard Ave., west of N. Jerrold Ave.

Lead Agency: Central Valley Regional Water Quality Control Board (CVRWQCB).

Potential Contaminants of Concern: Aviation fuel, pesticides, herbicides, fumigants, Toxaphene, waste oil.

Cleanup Status: Open – Site Assessment as of 5/28/2009.

Site History: This abandoned airstrip, which was formerly owned by the Broadview Water District (since annexed to Westlands Water District), operated from approximately 1975 to 2004, and was used by crop dusters and other agricultural aircraft. It contained a wash rack and fueling area for the aircraft. During a 2004 site investigation, soil staining was noted in the area and subsequent soil testing indicated the presence of Toxaphene at actionable levels. There is potential for heavy metals and aircraft fuel residues to be present along the airstrip. In November 2005, two nearby irrigation wells were destroyed and backfilled to protect public health and safety. In June 2006, the wash rack was demolished and the concrete hauled off-site for disposal (SWRCB 2025).

Air-Way Farms – Five Points Ranch Shop

Location: 18878 W. Mount Whitney Ave., east of W. Lake Ave.

Lead Agency: CVRWQCB

Potential Contaminants of Concern: Diesel, gasoline.

Cleanup Status: Open – Inactive as of 4/4/2019.

Site History: The site contained three ASTs that had operated since at least 1985. Two of the tanks were diesel and one was gasoline. In 2006 significant soil staining and groundwater sampling indicated the presence of both diesel and gasoline. In August of 2007 the three ASTs were removed (SWRCB 2025).

TMT Chemical Co.

Location: 26979 S. Butte Ave., south of N. Oakland Ave.

Lead Agency: DTSC.

Potential Contaminants of Concern: Pesticides, herbicides.

Cleanup Status: Open – Inactive as of 2010.

Site History: The TMT Chemical Company operated at the site from at least the 1960s until 1990. The site formerly discharged wastewater from a laboratory to a dry well. This practice was discontinued by 1985. DTSC conducted site screening of site in 2010 (DTSC 2025b).

Airway Farms Duster Ranch

Location: 14000 Lassen Ave., south of W. Jane Ave.

Lead Agency: CVRWQCB.

Potential Contaminants of Concern: Gasoline, diesel fuels.

Cleanup Status: Open – Inactive as of 4/4/2019

Site History: There was degradation of the underlying soil and groundwater associated with several ASTs. The ASTs contained total petroleum hydrocarbons as diesel (TPH-d) and as gasoline (TPH-g). There are six areas of

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concern identified, including four wells and two booster pumps. Further investigation is needed to delineate the extent of the impacts (SWRCB 2025).

Current and Former Agricultural Operations

The VCIP Plan Area has been in agricultural cultivation for many years. Agricultural operations include several elements with the potential for hazardous materials contamination as discussed below.

Above Ground Storage Tanks (ASTs), Trailer Tanks, 55-Gallon Drums, and Other Containers

Various sizes of polyvinyl ASTs exist 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. Trailer tanks are used to spray fertilizers and insecticides on crops. 55-gallon steel drums containing motor oil are associated with the mixing areas and agricultural wells. Other steel and plastic containers are used to store fuels, lubricants, fertilizers, and pesticides. All of these tanks and containers have the potential for spills or leaks which may result in staining of soils, concrete pads, and other surfaces, and potential contamination of groundwater.

Agricultural Wells and Pump Systems and Filter Stations

Agricultural wells and associated pumps and filtration stations are located throughout the Plan Area. Spills or leaks near agricultural wells or pump systems would be evident by staining on equipment pads and soil nearby.

Agricultural Chemical Application

Past and current agricultural practices within the Plan Area include application of agricultural chemicals such as fertilizers, pesticides, and herbicides. 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.

Agricultural Structures, Septic Systems, and Waste Disposal Sites

Ranch shops utilize petroleum products such as lubricants, fuels and solvents. Ranch buildings may also include asbestos-containing materials. Ranch septic systems may be subject to failure resulting in potential groundwater contamination. Farming operations may also include unregulated waste disposal sites, waste ponds, detention ponds, tailwater ponds, or burn piles or pits.

Pole-Mounted Electrical Transformers

Pole-mounted transformers are present near production well sites throughout the Plan Area. The transformers are typically owned and operated by PG&E. Older transformers contain polychlorinated biphenyls (PCBs) which can leak and result in staining or stressed vegetation nearby.

PCBs historically were 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 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). 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. Previous site assessments conducted in the District have found that most transformers are “non-PCB containing.” It is

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expected that this will be the case with other pole-mounted transformers in the Plan Area, such that the potential release of dielectric fluids is a low-level (not substantial) environmental concern.

Natural Gas and Crude Oil Pipelines

Several natural gas transmission pipelines pass through the Plan Area. These mainly consist of the following PG&E gas pipelines: 1) A 33-42-inch diameter trunk pipeline running parallel to I-5 on the east, including two compressor stations; 2) several 12-26-inch diameter pipelines branching off the main pipeline to the east and northeast to Fresno and Mendota areas; 3) several 13-18-inch diameter pipelines branching off the main pipeline to serve local areas within the Plan Area (PG&E 2025). A non-PG&E natural gas transmission pipeline, owned by the Energy Operations Management Corporation, branches off the main PG&E pipeline near W. Nebraska Avenue and heads north through the north-central portion of the Plan Area. A major crude oil pipeline runs through the western margin of the Plan Area along the base of the Diablo Range (US EIA 2025a). The concern with pipelines, especially high-pressure natural gas pipelines, is the risk of explosion caused by inadvertent contact by excavating equipment. This potential hazard is discussed in detail under Impact HAZ-6.

Abandoned Oil and Gas Wells

According to CalGEM, several designated oil and gas fields exist within or partially within the Plan Area. In the Plan Area lands east of I-5, there is one small gas field and five small oil fields, all of which have been officially classified as “abandoned.” In the foothills around Coalinga, there are several large active oil fields which partially extend into the Plan Area. These oil fields include thousands of formerly producing oil wells, most of which are idle or have been plugged and abandoned. Outside the designated oil and gas fields, there are hundreds of non-producing oil and gas wells scattered throughout the Plan Area, most of which were dry holes. There are no remaining actively producing oil or gas wells within or near the Plan Area. Several new exploratory wells exist within the Plan Area, however, including two wells southwest of the I-5/SR-145 interchange, and three new wells to the west of Five Points (CalGEM 2025a). All these new wells are outside of potential DFAs.

Non-operating wells are required to be plugged and abandoned (permanently closed and sealed) in accordance with state requirements. Typically, abandoned wells are plugged by placing cement in the well bore at certain intervals and buried by filling the bore hole with drilling mud. The section of pipe in the upper five feet of soil is removed and closed with a welded ½-inch steel cap, then covered with soil. Typically, no surface evidence of properly abandoned wells remains. Of the hundreds of former oil and gas wells in the Plan Area, seven wells are listed as “idle” (i.e., not producing, but not closed) by CalGEM, all of which are outside of potential DFAs. Two of the idle wells are located along SR-198 near S. Butte Avenue and are 0.3 and 1.2 miles from the nearest potential DFA, respectively. A cluster of five idle wells is located two miles west of Five Points and is 0.1 to 0.3 miles from the nearest potential DFA. These seven wells may represent orphan wells that have been deserted by their operators (CalGEM 2024a). Since deserted wells pose a threat to groundwater quality, CalGEM has an orphan well program to abandon the thousands of orphan wells in California. In cases where there is no financially solvent responsible operator, the Department of Conservation (DOC) will complete the abandonment with state and federal funds. Where there is a financially solvent responsible operator, DOC will undertake plugging and abandonment at the owner’s expense (CalGEM 2025b).

High Voltage Power Lines

Two parallel PG&E 230-kV transmission lines pass through the Plan Area along the east side of I-5. A PG&E 500-kV transmission line runs parallel to the two 230-kV lines as far north as SR-198 where it branches off to the west,

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crosses over I-5, and then follows the lower foothills of the Diablo Range. A second 500-kV transmission line, owned by the Western Area Power Administration (WAPA), extends west from the Gates Substation to the foothills where it turns northwest and runs parallel to the PG&E 500-kV transmission line to the Los Banos Substation on SR-152 in Santa Nella. Segments of the 230-kV transmission lines pass through potential DFAs north of SR-145, and north of the I-5/SR-33 interchange. The concern with high-voltage lines (i.e., 115 kV or greater) is that they pose an electrocution hazard to nearby construction, and potentially expose persons to electromagnetic fields (EMFs). These potential hazards are discussed in detail below under Impacts HAZ-6 and HAZ-9, respectively.

Public Use Airports

Robert William Johnston Municipal Airport in Mendota is a general aviation airport approximately 0.7 miles east of the Plan Area, 2.1 miles from the nearest potential DFA, and 1.9 miles from the connecting transmission corridor at its nearest point. The western portion of the Airport Influence Area (AIA) extends into the Plan Area for approximately one mile. This portion of the AIA includes only the Traffic Pattern Zone and does not include any approach/departure zone, runway protection zone, or other safety zones. The affected portion of the Plan Area is within the Conical Surface where structure heights are regulated under Federal Aviation Administration (FAA) Part 77 (Fresno COG 2023). This area is within the City of Mendota Proposed Sphere of Influence and is not planned for development under the VCIP.

New Coalinga Municipal Airport is a general aviation airport adjacent to the southwest portion of the Plan Area on the west. The nearest potential DFAs are located eight to ten miles north and northeast of the airport. The connecting transmission corridor and Substation 5 are located 13 miles northeast and are well outside the AIA.

Harris Ranch Airport is an airstrip near Coalinga on the western margin of the Plan Area near the I-5/SR-198 interchange. The nearest potential DFAs are located two miles northeast and 3.3 miles north of the airport. The connecting transmission corridor and Substation 5 are located eight miles northeast and are well outside the AIA.

Firebaugh Airport is a general aviation airport approximately three miles east of the Plan Area at its nearest point. The AIA for Firebaugh Airport extends as far west as the Delta-Mendota Canal approximately 1.6 miles east of the Plan Area.

There are also six private airstrips distributed throughout the Plan Area, and another five airstrips within five miles of the Plan Area.

NAS Lemoore

The military airfield at NAS Lemoore is in Kings County adjacent to the southeastern boundary of the Plan Area. The nearest potential DFAs are located 0.7 to 2.0 miles west and southwest of the airfield. The approach/departure zones for flight operations at the airfield extend west about eight miles from the airfield to SR-269. Most of the potential DFAs east of SR-269 are within the approach/departure zones (JLUSPC 2011). The restrictions on land use within this zone are discussed below under Impact HAZ-11.

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4.9.2. Regulatory Context

Federal

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)

CERCLA establishes prohibitions and requirements concerning closed and abandoned hazardous waste sites, provides for liability of persons responsible for releases of hazardous waste at these sites, establishes a trust fund to provide for cleanup when no responsible party can be identified, and authorizes response actions. The U.S. EPA has principal authority for administration of CERCLA.

Resource Conservation and Recovery Act (RCRA)

RCRA authorizes the U.S. EPA to control hazardous waste, including generation, transportation, treatment, storage and disposal. 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, primary responsibility for administration of RCRA in California was delegated to DTSC. The U.S. EPA continues to regulate hazardous substances under CERCLA.

Occupational Safety and Health Administration (OSHA)

OSHA is responsible for assuring worker safety in the handling and use of chemicals in the workplace. The federal regulations pertaining to worker safety are contained in Title 29 of the Code of Federal Regulations, which provide standards for safe workplaces and work practices, including standards relating to hazardous materials handling. For workers who will be potentially exposed to hazardous substances, OSHA requires training under its Hazardous Waste Operations and Emergency Response Standard (HAZWOPER). It also requires preparation of health and safety plans to establish procedures to protect workers and the public from exposure to potential hazards at contaminated sites.

In California, federal OSHA regulations are enforced by the California Occupational Health and Safety Administration (Cal/OSHA), discussed below.

Federal Toxic Substances Control Act (TSCA)

TSCA 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 storage, use, and disposal of PCB-containing materials.

Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)

FIFRA provides 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

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U.S. EPA. Registration assures that pesticides will be properly labeled and, if applied in accordance with label instructions, will not cause unreasonable harm to the environment.

Federal Hazardous Materials Transportation (HMT) Act

The 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 HMT Act requires carriers to immediately notify the DOT of certain hazardous materials incidents that occur during the course of transportation, including loading, unloading, and temporary storage. The California Department of Transportation (Caltrans) implements the federal legislation at the state level, and the regulations are enforced by the California Highway Patrol.

Federal Aviation Regulations (FAR)

Part 77 of the Federal Aviation Regulations (FAR) – “Objects Affecting Navigable Airspace,” (CFR Title 14) establishes standards for determining obstructions to navigable airspace and the effects of such obstructions on the safe and efficient use of that airspace. The regulations require that the FAA be notified of proposed construction or alteration of objects – whether permanent, temporary, or of natural growth – if those objects would be of a height which exceeds the FAR Part 77 criteria. The height limits are defined in terms of imaginary surfaces in the airspace extending about two to three miles around airport runways and approximately 9.5 miles from the ends of runways having a precision instrument approach.

State of California

The California Environmental Protection Agency (Cal-EPA), the SWRCB, and its nine Regional Water Quality Control Boards (RWQCBs) have primary responsibility for the use and management of hazardous waste. Within Cal-EPA, DTSC has primary regulatory responsibility, with delegation of enforcement to local jurisdictions that enter into agreements with the state agency for management of hazardous materials and generation, transport and disposal of hazardous waste. Depending on the nature of contamination, the lead agency responsible for regulating hazardous materials at a site can be DTSC, the RWQCB, or both. In general, contamination affecting groundwater is handled by the RWQCB and soil contamination is handled by 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, which is publicly accessible on DTSC’s EnviroStor database, 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 Act

The California Hazardous Waste Control Act is the state’s equivalent to RCRA and closely parallels RCRA by regulating 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 lies with DTSC, which also administers the state’s delegated responsibilities under RCRA.

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Hazardous Substance Account Act (HSAA)

The HSAA (California Superfund) has three purposes: 1) to respond to releases of hazardous substances; 2) to compensate for damage caused by such releases; and 3) to pay the state's ten percent (10%) 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 (Porter-Cologne 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

Businesses that handle specified hazardous materials must submit to the permitting agency (typically the local fire department), an inventory of 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 for 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 (Unified Program)

The Unified Program is the administrative consolidation of six hazardous materials and waste programs (Program Elements) under a single local agency as 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 (aka 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 Fresno County is the Department of Public Health, Environmental Health Division.

Underground Storage of Hazardous Substances Act

Steel underground fuel tanks must be fitted with secondary containment or both interior lining and cathodic protection, as well as other leak prevention features. Permitting of each underground storage tank is administered by each county's CUPA under a Memorandum of Agreement with the state RWQCBs.

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Aboveground Petroleum Storage Act

Owners or operators of aboveground petroleum storage tanks must 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 or cumulative storage capacity of greater than 1,320 gallons are required to file a Storage Statement with the SWRCB. 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)

Proposition 65 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 required 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 (DPR)

The DPR regulates the use of pesticides and herbicides under Title 3, Division 6 of the California Code of Regulations. The DPR'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 Green Building Standards Code (CALGreen)

CALGreen, part 11, title 24 of the California Code of Regulations (CCR), sets forth requirements for disposal and recycling of hazardous and universal wastes. Specific standards and requirements are included for the identification, collection, transport, disposal, and recycling of hazardous wastes. These include universal wastes, such as batteries, electronic devices, mercury-containing equipment, lamps, cathode ray tubes, and aerosol cans. Requirements are detailed for recycling, recovery, returning spent items to the manufacturer, or disposal at an appropriately permitted facility.

PV Modules Universal Waste Management Regulations

In late 2020, the California Office of Administrative Law (OAL) approved regulations (OAL Reference Number: A-2019-0409-04), effective January 1, 2021, for managing PV modules as universal waste. Under the regulations, all PV modules are classified as universal waste (e-waste) and are not considered to be hazardous waste (CCR, Title 22, section 66261.9). The adopted regulations include specific requirements for handling, transport, treatment, and disposal of discarded PV modules.

California Office of Emergency Services (OES)

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) must be available to firefighters, public safety officers, and regulatory agencies and must be included in Hazardous Materials Business Plans (HMBPs) in order to prevent or mitigate the damage to the health and

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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 workplace safety standards, including standards related to hazardous materials handling. Cal/OSHA standards are generally more stringent than federal regulations. Cal/OSHA regulations concerning 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 32000.5 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 for transportation of explosives, inhalation hazards, and radioactive materials are enforced by the CHP under the authority of the California Vehicle Code.

State Aeronautics Act

The State Aeronautics Act (Public Utilities Code section 21001 et seq.) provides for the right of flight over private property, unless conducted in a dangerous manner or at altitudes below those prescribed by federal authority. This Act also gives CalTrans and local governments the authority to protect the airspace defined by FAR Part 77 criteria. It prohibits any uses of the airspace above a property which would interfere with the right of flight, including established approaches to a runway. The act also prohibits any person from constructing any structure or permitting any natural growth of a height which would constitute a hazard to air navigation as defined in FAR Part 77, unless CalTrans issues a permit. The permit is not required if the FAA has determined that the structure or growth does not constitute a hazard to air navigation or would not create an unsafe condition for air navigation (Caltrans 2011).

California Public Utilities Commission (CPUC) General Order No. 95

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 ensure 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.

CPUC General Order No. 167-C, SB 38 (2022), and SB 1383 (2023)

On March 13, 2025, the CPUC adopted General Order (GO) 167-C to implement SB 38 (2022) and SB 1383 (2023), which address the need for safety oversight of battery energy storage (BESS) facilities. SB 38 requires each battery energy storage facility owned by an electrical corporation or located in the state to prepare an emergency response and emergency action plan that covers the premises of the battery energy storage facility {AM0013.1}

and submit the plan to the county and city where the facility is located. It also requires the owner or operator of the facility to coordinate with the local emergency management agencies, unified program agencies, and local first response agencies. SB 1383 directs CPUC to implement and enforce maintenance and operation standards for energy storage facilities owned by an electrical corporation or located in the state. CPUC GO 167-C applies to all BESS facilities in the state with a capacity of 50 MW or greater, which must comply with CPUC GO 167-C's "Maintenance Standards" and "Operations Standards." These standards establish guiding principles that must be incorporated into the maintenance plan and operation plan submitted to CPUC for each BESS facility subject to CPUC GO 167-C (CPUC 2025b, 2025c).

The current Fresno County Ordinance Code adopts the 2022 California Fire Code (CFC) which is based on the 2021 IFC with supplements and additions (Fresno County 2024c). The current codes and standards applicable to BESS facilities are described in detail below.

California Fire Code (CFC)

The 2022 CFC adopts the 2021 International Fire Code (IFC) as the state's fire code. CFC 1207 Electrical Energy Storage Systems (ESS) addresses fire safety for BESS. Section 1207.1.4 requires a failure modes and effects analysis. Section 1207.1.4.1 requires hazard mitigation analysis of seven failure modes. Section 1207.1.5 requires a large-scale fire test of a representative ESS in accordance with UL 9540A. Section 1207.3.4 requires an energy storage management system that monitors and balances cell voltages, currents and temperatures, and provides for automatic shutoff when unsafe conditions are detected. Section 1207.4.7 requires the installation of exhaust systems for toxic gases. Section 1207.5.1 requires 3 feet of separation between ESS groups. Section 1207.5.4 requires automatic smoke detection systems or radiant energy sensing systems with connection to remote alarm systems. Section 1207.5.5 requires automatic fire suppression systems, with alternative automatic systems required for ESSs that utilize water-reactive materials. Section 1207.5.6 limits the size of BESS containers to 53 feet by 8 feet by 9.5 feet high. Section 1207.5.7 requires that areas within 10 feet of a BESS container be cleared of combustible vegetation. Section 1207.6.1 requires mechanical exhaust ventilation of flammable gas exceeding 25 percent of the volume of the room, as measured by a gas detection system with automatic trouble signaling to a remote alarm in the event of failure. Section 1207.6.3 requires explosion control (e.g., automatic release of gases through vents in top of container). Section 1207.6.5 requires the BESSs be provided with an approved method to prevent, detect and minimize the impact of thermal runaway (ICC 2024).

National Fire Protection Association (NFPA) 855

The NFPA 855 *Standard for Installation of Stationary Energy Storage* is similar to IFC section 1207, but has not been adopted as part of the fire code for California. However, most of NFPA 855 has been adopted in IFC section 1207, so the BESS-related content of the IFC is largely harmonized with NFPA 855 (EPRI 2023).

UL Qualification Standards for BESS

U.S. fire and electrical codes require that energy storage systems be tested by a Nationally Recognized Testing Laboratory (a private-sector organization recognized by the OSHA) and certified to meet consensus-based test standards. The leading testing organization is UL Solutions (UL) (formerly Underwriters Laboratories). For BESS, the standard is UL 9540, *Energy Storage Systems and Equipment*, which was published in 2016. The most recent third edition was published on June 28, 2023, and was last revised on March 7, 2025. UL 9540 is a safety standard for the construction, manufacturing and performance testing and marking of battery energy storage systems (UL 2025). UL 9540A is a test method to evaluate the fire safety hazards associated with propagating

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thermal runaway within battery systems. The tests establish that a storage technology is capable of reaching thermal runaway and then assess the fire and explosion hazards of that technology (UL 2025b; Mayfield 2024). (For a detailed description of UL testing requirements for BESS, see Section 4.9.3.1. *Direct and Indirect Impacts*, under Impact HAZ-2.)

Fresno County

Fresno County General Plan

The Fresno County General Plan (Fresno County 2024b) includes the following goals and policies related to hazards and hazardous materials that may be relevant to the VCIP:

Health and Safety Element

E. Airport Hazards

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| GOAL HS-E | To minimize the exposure of the public to high noise levels and safety hazards through land use controls and policies for property in the vicinity of airports, and to limit urban encroachment around airports in order to preserve the safety of flight operations and the continued viability of airport facilities. |
| Policy HS-E.2 | Airport Safety Hazards
The County shall ensure that new development, including public infrastructure projects, does not create safety hazards such as glare from direct or reflective sources, smoke, electrical interference, hazardous chemicals, or fuel storage in violation of adopted safety standards. |
| Policy HS-E.3 | Federal Airport Safety Zones
The County shall ensure that development, including public infrastructure projects, within the airport approach and departure zones complies with Part 77 of the Federal Aviation Administration Regulations (Objects Affecting Navigable Airspace). |

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 | Hazardous Materials Facilities
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.2 | Hazardous Waste Applications
The County shall require that applications for discretionary development projects that will use hazardous materials or generate hazardous waste in large quantities include detailed information concerning hazardous waste reduction, recycling, and storage. |

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Policy HS-F.3 Hazardous Materials Incident Response Plan
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.

Policy HS-F.4 Soil and Groundwater Contamination Reports
For redevelopment or infill projects or where past site uses suggest environmental impairment, the County shall require that an investigation be performed to identify the potential for soil or groundwater contamination. In the event soil or groundwater contamination is identified or could be encountered during site development, the County shall require a plan that identifies potential risks and actions to mitigate those risks prior to, during, and after construction.

Policy HS-F.5 Demolition Standards
The County shall require that demolition of structures where friable asbestos or other hazardous materials could be released into the environment comply with applicable regulations and standards.

Policy HS-F.6 Timely Site Cleanup
The County shall work cooperatively with the State Department of Toxic Substances Control and Regional Water Quality Control Board to promote the timely and efficient cleanup of contaminated sites under the regulatory oversight of these agencies.

Open Space and Conservation Element

G. Air Quality

Policy OS-G.13 Valley Fever Mitigation
The County shall continue to promote public awareness of Valley Fever risks relating to ground disturbing activities through the provision of educational materials, webpages and resource contact information. For projects involving ground disturbance on unpaved areas left undisturbed for 6 months or more, the County shall require developers to provide project-specific Valley Fever training and training materials.

Division of Environmental Health

The Fresno County Department of Public Health, Environmental Health Division, 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 has primary authority for administration and enforcement of hazardous materials regulations in Fresno County. In accordance with state law, in 1996 the County created the CUPA to consolidate all County hazardous materials programs under one agency. The Environmental Health Division is the designated 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., ASTs and LUSTs, 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

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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 Environmental Health Division. 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 HMBP and Chemical Inventory. The program provides for 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 LUSTs.

Fresno County Hazard Mitigation Plan

Adopted by the Board of Supervisors in 2024, the Fresno County Hazard Mitigation Plan (HMP) was developed to better guide hazard mitigation planning in the County. The HMP discusses risks associated with human-caused hazards such as hazardous waste. Facilities that involve hazardous material or hazardous waste are identified, counted and located. The HMP also identifies sites of previous hazardous material release and previous transportation incidents involving hazardous waste and past hazardous materials incidents. The HMP establishes goals and policies aimed to mitigate potential hazards including requiring permitting and specialized building design and regulation for handling hazardous materials, cooperation with state and federal agencies with expertise in hazardous materials, assessment and remediation of any contamination, disaster and emergency preparedness and public information.

Fresno County Multi-Jurisdictional Hazard Mitigation Plan

The Fresno County Office of Emergency Services (OES) is responsible for the preparation and implementation of the Fresno County Multi-Jurisdictional Hazard Mitigation Plan. This plan serves as a guide for the County’s response to emergencies and disasters in the unincorporated areas of the County. In a large-scale emergency, the plan would be activated by the Fresno County OES which would take the lead in coordinating multiple jurisdictions in implementing the plan. The plan provides support services and coordination activities to response agencies that assess, mitigate, and respond to threats to the public and the environment in the event of hazardous material releases, including the recovery and removal of the hazardous materials. While the plan outlines a general structure for emergency responders in the event of an emergency in the County, it does not establish any specific evacuation routes or plans, standards, goals, or policies (Fresno County 2018).

Fresno County Master Emergency Services Plan

In October 2017, Fresno County Office of Emergency Services (OES) prepared the updated Master Emergency Services Plan to serve as a guide for response to an emergency or disaster in the unincorporated areas of the County, and to coordinate and assist with the disaster response in jurisdictions both within and outside of the County. The plan outlines a general structure for emergency responders in the event of an emergency in the County and does not establish any specific evacuation routes or plans, standards, goals, or policies (Fresno County 2017d).

Fresno County Airport Land Use Compatibility Plan (ALUCP)

The Fresno County ALUCP, prepared for the Fresno County Airport Land Use Commission (ALUC) in 2018, is intended to protect and promote the safety and welfare of residents, businesses, and airport users near the public use airports and NAS Lemoore in Fresno County, while supporting continued operation of these facilities. Specifically, the ALUCP seeks to: ensure that people and facilities are not concentrated in areas

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susceptible to aircraft accidents; protect the public from the adverse effects of airport noise; and ensure that no structures or activities encroach upon, or adversely affect, the use of navigable airspace. The ALUCP contains a land use compatibility plan for each of the nine public use airports in Fresno County, which form the basis for the ALUC's review of local agency land use actions for consistency with the land use compatibility policies and criteria of the ALUCP (Fresno COG 2023).

Fresno County Fire Code

Fresno County Ordinance Code Chapter 15.10, "Fire Code," adopts the 2022 CFC, which is based on the 2021 IFC (Fresno County 2024c). The CFC is described above.

4.9.3. Environmental Impact Analysis

METHODOLOGY

The following impact analysis is based on a review of relevant environmental databases, published technical literature, and previous environmental assessments prepared on projects in the region. The analysis considered the potential impacts of construction, operation and maintenance, and decommissioning in the context of applicable regulations, guidelines, and standards. Potential impacts were evaluated against the applicable thresholds of significance to determine whether implementation of the VCIP would result in potentially significant impacts on the physical environment related to hazards and hazardous materials. The mitigating effects of existing regulations and policies aimed at abating hazards and hazardous materials were considered in making impact conclusions. When an impact is determined to be potentially significant, mitigation measures are identified to avoid or reduce impacts to less-than-significant levels.

SIGNIFICANCE CRITERIA

Based on Appendix G of the state CEQA Guidelines, implementation of the VCIP would be considered to have a potentially significant impact related to hazards and hazardous materials if it would:

- a. Create a significant hazard to the public or environment through the routine transport, use, or disposal of hazardous materials.
- b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.
- c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.
- d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code section 65962.5 and, as a result, would create a significant hazard to the public or the environment.

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- e. Be 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, and the project would result in a safety hazard or excessive noise for people residing or working in the project area.
- f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

Note: The Environmental Checklist in Appendix G of the CEQA Guidelines includes the following significance criterion related to wildfire under “IX. Hazards and Hazardous Materials” for projects that would:

- g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.

In 2018, a new impact category – “XX. Wildfire” – was added to the Appendix G Checklist, which requires additional analysis of the wildfire issue. To provide a comprehensive analysis of the wildfire issue in one section of this PEIR, item ‘g’ above has been added as a significance criterion to Section 4.18. *Wildfire* and is not addressed in this section.

4.9.3.1. DIRECT AND INDIRECT EFFECTS

Impact HAZ-1. Potential Hazard from Routine Transport, Use, or Disposal of Hazardous Materials

Hazardous materials could be released during construction, operation, and decommissioning of the VCIP facilities. Potential hazards would be reduced to less-than-significant levels through compliance with applicable laws, regulations, and other requirements governing the transport, handling, use, storage, and disposal of hazardous materials. (*Less-than-Significant Impact*)

VCIP Energy Resource Plan– Analysis of Impact HAZ-1

Construction, operation, and decommissioning of the VCIP solar and energy storage projects would involve the use, transport and disposal of hazardous materials, as discussed below.

Project Construction

The hazardous materials used during construction of the VCIP solar and energy storage projects would include gasoline, diesel fuel, oils, lubricants, solvents, detergents, degreasers, paints, welding and soldering supplies, pressurized gases, etc. All hazardous materials would be stored in containers that are specifically designed for the materials to be stored.

During construction, substantial quantities of gasoline, diesel fuel, and transformer insulating oil (mineral oil) would be transported to the project sites. A spill of these hazardous liquids *en route* to a project site could result in potentially significant impacts related to soil, surface water, groundwater, or public health and safety. Such materials are routinely and safely transported on public roadways, however. The transport of large quantities of hazardous materials is strictly regulated by the CHP. Large quantities of hazardous materials used {AM0013.1}

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 of the solar and energy storage facilities, minor spills or discharges of hazardous materials could occur due to improper handling, storage, and/or disposal. The potential for significant release of hazardous materials would be minimized through preparation and implementation a Storm Water Pollution Prevention Plan (SWPPP) for each project, as required by the SWRCB (for a detailed discussion, see section 4.10. *Hydrology and Water Quality*). The SWPPPs would require Best Management Practices (BMPs) for control and 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. Construction workers would be trained in the proper handling and storage of hazardous materials and waste, such as during fueling of construction vehicles and equipment, and containment and cleanup actions to take in the unlikely event of a spill of hazardous materials or waste. Implementation and enforcement of SWPPPs at each project site is the responsibility of the CVRWQCB, whose responsibilities include conducting inspections of the project construction sites to ensure effective implementation of BMPs specified in the SWPPPs prepared for each project.

Implementation of SWPPPs in conjunction with the construction of the VCIP solar and energy storage projects, with regulatory oversight, would ensure that hazardous materials used in project construction are properly handled, stored, and disposed of. Therefore, the potential for impacts to the public and the environment from routine transport, use, and disposal of hazardous materials during construction of the VCIP solar and energy storage projects would be *less than significant*.

Project Operation

Operation and maintenance of the VCIP solar and energy storage facilities would involve transportation, 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 suppressants. During operation of the facilities, minor spills or discharges of hazardous materials could occur due to improper handling, storage, and/or disposal. The potential for significant release of hazardous materials would be minimized through preparation and implementation of HMBPs for each project as required under the Hazardous Materials Release Response Plan and Inventory Act of 1985. Under this state law, the project proponent is required to prepare an HMBP to the satisfaction of the Fresno County Public Health Department, Environmental Health Division, which is the CUPA for Fresno County. The HMBP would 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 project site, and procedures for handling and disposing of unanticipated hazardous materials encountered during construction. The HMBP would include an inventory of the hazardous waste generated on site and would 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 would be promptly contained and abated in accordance with applicable regulatory requirements and reported to the Fresno County CUPA. Implementation of the HMBPs in conjunction with operation of the VCIP solar and energy storage projects would ensure that any minor spills or releases of hazardous materials would not pose a significant risk to the public or the environment.

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The large transformers within the project substations would contain mineral oil, which ordinarily does not require replacement. The transformers would have secondary containment to minimize hazards from any leaks or spills. The smaller transformers distributed throughout the solar fields at the Power Conversion Stations, and those located in the BESS facilities would contain F3 (a vegetable-based oil as an insulating fluid, or similar) which do not require secondary containment. The battery storage systems may be considered hazardous, including but not limited to lithium ion, sodium sulfur, sodium hydride, and nickel hydride. The batteries would be stored in metal-framed storage containers that house multiple battery modules mounted in racks. The energy storage containers would be insulated, air conditioned, and equipped with a fire suppression system. The containers would be sealed such that no fluid leaks could escape from the containers.

Herbicides used at the VCIP solar and energy storage facilities to control noxious weeds and invasive species would be applied in accordance with the Pest Management Plan to be prepared for each project consistent with the Fresno County Solar Facility Guidelines (Fresno County 2017c). The herbicides would be applied by licensed herbicide applicators, in compliance with the regulations of the U.S. EPA, and the California 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 DTSC (DTSC 2008).

Past agricultural practices within the Plan Area would have involved the use of environmentally persistent pesticides. Soil sampling and testing at other project sites in the District have found that residual concentrations of these “legacy” pesticides in soils are typically well below hazardous levels (see detailed discussion under Impact HAZ-3 below.)

It is possible that some VCIP solar projects could employ thin-film modules containing Cadmium-Telluride (CdTe) which is classified as a hazardous material. As is the case with all solar facilities, 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 under “Decommissioning” below.

Compliance with applicable federal, state, and County regulations governing transportation, use, handling, and disposal of hazardous materials and hazardous waste, with regulatory oversight, during operation of the solar and energy storage facilities would minimize the risk to the public and the environment of exposure to hazardous materials. Therefore, the potential for impacts to the public and the environment from routine transportation, use, and disposal of hazardous materials during operation of the VCIP solar and energy storage facilities would be *less than significant*.

Decommissioning

As described in Chapter 2. *Project Description*, when the VCIP solar and energy storage facilities reach the end of their productive lives, the solar arrays, battery containers, and supporting infrastructure would be disassembled and removed, with all materials recycled, reused, or disposed of as appropriate in accordance with the Reclamation Plan prepared for the solar facility, consistent with Fresno County’s Solar Facility Guidelines (Fresno County 2017c). The materials to be removed would include solar arrays, inverters, transformers, cabling and wiring, and perimeter fencing, among other things, which would be either reused or recycled. Concrete equipment pads would be removed and recycled or reused as clean fill. The batteries in the energy storage facilities would be recycled or disposed of at a hazardous waste facility in accordance with applicable regulations for the disposal of hazardous materials.

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During decommissioning of the solar and energy storage facilities, minor spills or discharges of hazardous materials could occur due to improper handling, storage, and/or disposal. As described above for the construction and operational phases, compliance with existing laws and regulations governing the handling, storage, containment, cleanup, and disposal of hazardous materials and hazardous waste during decommissioning of solar and energy storage facilities would minimize the risk to the public and the environment from exposure to hazardous materials. In addition to the other applicable laws and regulations described above, impacts would be avoided or substantially reduced through the preparation and implementation of SWPPPs, which are required for decommissioning as well as construction.

Hazardous Materials in Solar Panels

There are two predominant semiconducting materials used in PV technology including: crystalline silicon (c-si) which is the conventional material used in flat plate panels; and thin-film semiconductors such as amorphous silicon (a-si) and CdTe. The silicon-based solar cells do not contain hazardous materials, although they may use lead-containing solders. Project operators would be required to plan for and fund recycling, reuse, or disposal of solar PV cells in compliance with a Reclamation Plan for each potential project and with all applicable local, state, and federal regulations to avoid improper decommissioning of these panels and associated potential impacts.

The CdTe employed in thin-film solar panels is a hazardous substance when not imbedded within a PV module. (Cadmium compounds are classified by US EPA as a probable human carcinogen (US EPA 2016)). During the manufacturing process, the CdTe semiconductor layer is sealed between two sheets of glass. CdTe contained within PV modules is highly stable and no emissions of any kind are generated when PV modules are used under normal conditions (Fthenakis 2003). The modules meet rigorous performance testing standards demonstrating durability in a variety of environmental conditions, and are subject to several independent safety certifications. First Solar, the primary manufacturer of CdTe panels, has a program for recycling modules at the end of their 25-year life cycle. During the recycling and refining process, up to 90 percent of the semiconductor material is recovered for reuse in new modules (First Solar 2024).

Under California law, all PV modules are classified as universal waste (e-waste) and are not considered to be hazardous waste (CCR, Title 22, section 66261.9). In late 2020, the California Office of Administrative Law (OAL) approved regulations (OAL Reference Number: A-2019-0409-04), effective January 1, 2021, for managing PV modules as universal waste (DTSC 2025a). The adopted regulations include specific requirements for handling, transport, treatment, and disposal of discarded PV modules. All PV modules brought to a project site that are deemed unusable would be recycled at a private facility by the project operator or handled and disposed of as universal waste.

Potential use and disposal of PV modules at the VCIP solar facilities would not result in a significant risk of release of hazardous materials that would be harmful to the public or the environment and the impact is considered *less than significant*.

The handling, use, storage, transport, and disposal of hazardous materials during construction, operation, and decommissioning of the VCIP solar and energy storage facilities could potentially result in significant hazards to the public and the environment. Implementation of SWPPPs and HMBPs in conjunction with the construction, operation, and decommissioning of the VCIP solar and energy storage projects, with regulatory oversight and compliance with regulatory requirements described in Section 4.9.2. *Regulatory Context*, would ensure that hazardous materials used at the solar and energy storage facilities are properly handled, stored, and disposed

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of during all project phases. Therefore, the potential for impacts to the public and the environment from routine transport, use, and disposal of hazardous materials during the construction, operation, and decommissioning of the VCIP solar and energy storage projects would be *less than significant*.

VCIP Infrastructure Plan – Analysis of Impact HAZ-1

Construction and maintenance of the VCIP substations, gen-tie lines, and transmission lines would involve the handling and use of hazardous materials such as fuels, lubricants, solvents, welding supplies and other materials. The transport, use, and disposal of hazards and hazardous materials in connection with these projects is highly regulated under existing federal and state laws and construction and operating standards for electrical utilities for the purpose of protecting public health and safety. Construction and maintenance workers would be trained in the proper handling and storage of hazardous materials and waste, such as during fueling of construction vehicles and equipment, and containment and cleanup actions needed in the unlikely event of a spill of hazardous materials or waste. The VCIP infrastructure projects would also be required to implement SWPPPs during construction, which would include provisions for handling, use, and disposal of hazardous materials, as described above for the VCIP solar and energy storage projects.

Implementation of applicable laws and regulations governing the transport, use, and disposal of hazardous materials, with regulatory oversight and compliance with regulatory requirements described in Section 4.9.2. *Regulatory Context*, would ensure that hazardous materials used in construction and operation of VCIP infrastructure facilities are properly handled, stored, and disposed of. Therefore, 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 VCIP infrastructure facilities would be *less than significant*.

Conclusion

Implementation of the VCIP Energy Resource and Infrastructure Plans would not create a significant hazard to the public or environment through the routine transport, use, or disposal of hazardous materials. Therefore, the overall impact in this regard would be *less than significant*.

Mitigation Measures: No mitigation is required.

Impact HAZ-2. Hazards Related to Battery Energy Storage Systems (BESS)

Installation and operation of BESS in VCIP projects would potentially result in health, safety, and environmental hazards. These hazards can largely be avoided or reduced to a level that is less than significant through compliance with the codes and objective standards applicable to BESS facilities; however, additional mitigation measures may be applicable at the project level to address site-specific conditions. (*Less-than-Significant Impact with Mitigation*)

Introduction and Background

BESS facilities play a key role in reaching California’s carbon neutrality goal by 2045 by balancing intermittent renewable energy and managing grid reliability and stability. BESS technology is capable of absorbing energy, {AM0013.1}

storing it for a period of time, and thereafter dispatching the energy, particularly during peak evening periods when solar facilities are not generating clean energy. Statewide, BESS capacity has increased from 500 MW in 2019 to 13,300 MW in 2024. The state's projected need for BESS capacity is estimated to be 52,000 MW by 2045 (CPUC 2025b).

The most common BESS technologies are based on lithium ion batteries (LIB) which are widely used because of their high energy density, long life cycle and low cost. BESS installations typically consist of pre-fabricated large containers that resemble ocean shipping containers with several battery cells inside. Common LIB cell chemistries include iron-phosphate (LFP), nickel-manganese-cobalt (NMC), lithium-nickel-cobalt-aluminum oxide (NCA), and others. A major supplier of prefabricated BESS modules is Tesla Energy, whose current model Megapack 2 XL utilizes LFP chemistry (see Figure 2.5-4).

Potential Hazards Associated with BESS

Fire, Explosion, and Thermal Runaway

Large lithium-ion BESS installations pose potential fire hazards. Because they store large amounts of energy, one of the principal hazards associated with lithium-ion BESSs is fire, which can be ignited if a charged battery cell is somehow damaged, for example by being opened, punctured, or crushed. A fire could also be caused if a battery cell is short circuited, overheated, or experiences thermal runaway. Thermal runaway is a process in which the lithium-ion cell enters an uncontrollable, self-heating state where the cell releases more heat than it can typically safely dissipate. This state can result in extremely high temperatures, fire, and off-gassing of flammable gases resulting in explosion within the BESS container and release of smoke and toxic gases.

During the past several years, there have been battery fires in California and elsewhere, which have heightened concerns with BESS safety and prompted legislation and changes to fire codes with the objective of reducing potential safety hazards associated with BESS. On January 16, 2025, a severe battery fire occurred at the 300 MW Moss Landing Battery Storage Facility owned by Vistra Energy, which had been completed in 2020. The blaze prompted the evacuation of over 1,200 residents from nearby communities and released plumes of black smoke, raising concerns with health safety (Monterey Co. 2025a). The main factors contributing to the severity of the Moss Landing incident included outmoded battery chemistry, poor facility design, and insufficient safety regulation, as discussed below.

The first factor that contributed to the Moss Landing event involved battery chemistry. The batteries in the Moss Landing fire were NMC batteries manufactured by LG Corporation. NMC batteries have high energy density and were first widely used to respond to the exponential demand of electric vehicles (EVs) and became the prominent battery chemistry used for early energy storage facilities. High energy density is a vulnerability when defects cause these batteries to heat up to a threshold temperature and enter thermal runaway, a chain reaction that can quickly run out of control. Several other battery fires involved LG batteries, most notably a 2019 battery explosion in Arizona. Currently, the dominant battery chemistry is LFP, which provides greater stability and fire safety at the cost of lower energy density. The estimated temperature threshold for thermal runaway in LFP batteries is around 518°F, versus 302°F to 392°F for NMC batteries, which makes NMC batteries more susceptible to overheating and failure (Spector 2025).

The second factor contributing to the severity of the January 2025 Moss Landing event was the outmoded design of the facility (by current standards), which completed construction in 2020. The uncontained batteries were stacked on top of each other, arranged in rows and enclosed within an old PG&E gas turbine building from the {AM0013.1}

1950s which had been converted to a battery vault. This packed too much concentrated battery fuel into one enclosed space, creating conditions for a large unstoppable fire. Because battery fires cannot be extinguished by water, the fire was allowed to burn itself out over several days. The absence of containers to isolate the battery cells contributed to the spread of the fire. The 2019 Arizona event also demonstrated how combustible gases emitted from the burning batteries can accumulate in an enclosed space and result in an explosive concentration of gases, which highlighted the importance of ventilation. Current practice is to place battery storage projects outdoors, with batteries enclosed in modular containers that are spaced apart to reduce the potential for fire to propagate and spread to neighboring containers. Each container includes batteries, controls, and safety equipment. Projects are currently designed so that if a fire breaks out in one individual container, it will not propagate to neighboring units. This limits the amount of fuel to feed a fire and makes it easier for emergency responders to access surrounding containers and cool them off with water. The effectiveness of this design was evident in an earlier fire in 2022 that occurred in a different part of the Vistra Moss Landing facility where 256 Tesla Megapack battery containers (with LFP chemistry) had been installed outdoors in a spaced modular configuration. During the Moss Landing fire, only one Tesla Megapack battery container caught fire and did not spread to other nearby containers. The elements that were critical in limiting the fire included proper training for first responders, with the appropriate fire water supply infrastructure, and an effective monitoring system (Spector 2025).

The third factor contributing to the severity of the 2025 Moss Landing event was the absence of enforceable safety regulations specific to the design of large-scale battery storage at the time of installation in 2018-2020. The design and installation of early BESS projects were not regulated by specific building, electrical, fire and product qualification codes and standards. Instead, generic, or less relevant requirements for smaller battery packs were applied, which did not address hazards associated with much larger BESS batteries (EPRI 2023). As described subsequently, fire codes and standards have evolved rapidly in recent years to specifically address BESS fire safety issues.

Release of Toxic Gases and Hazardous Materials

Lithium-ion battery fires generate intense heat and considerable amounts of gas and smoke. The gases that are released from battery energy storage systems are highly flammable and toxic. The type of gas released depends on the battery chemistry involved but typically includes gases such as: carbon monoxide, carbon dioxide, hydrogen, methane, ethane, and other hydrocarbons. As noted, the 2025 Vistra Moss Landing fire event prompted the evacuation of over 1,200 residents from the surrounding area due to concern with the release of toxic gases from the battery fire.

At the Vistra Moss Landing fire incident, the U.S. EPA began air quality monitoring within hours of the start of the fire and continued monitoring for three days while the fire was burning. Air quality was monitored at nine locations including stations near the facility, and in the surrounding communities. Throughout the incident, EPA's air monitoring data showed that particulate matter concentrations were within good to moderate air quality index (AQI) thresholds deemed safe for the general public and posed no risk to public health. Monitoring for hydrogen fluoride gas, which is a highly toxic gas produced by lithium-ion battery fires, was conducted at one second intervals and was found not to exceed California human health standards. Additional mobile monitoring from Vistra's third-party contractor and from the Monterey Bay Air Resources District further supported this finding (Monterey Co. 2025a, 2025b, 2025c; US EPA 2025a). During the Escondido lithium battery fire in San Diego County in 2024, contemporaneous air quality monitoring found that only normal products of combustion of a structure fire were detected and at levels considered by NIOSH and OSHA to be well below exposure thresholds (Escondido 2024a).

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A few days after the Vistra Monterey Landing fire was extinguished, soil and water sampling and analysis was conducted in the area by the California Department of Toxic Substances Control (DTSC) in coordination with the Monterey County Environmental Health Bureau (EHB). OEHHHA performed a residential screening level human health risk assessment on PAHs, metals, and other inorganic chemicals measured in surface soil and surface water samples collected by DTSC. The key findings from the lab testing of the soil samples were: 1) Metal and polycyclic aromatic hydrocarbons (PAHs) concentrations in six out of the eight sampling locations were within acceptable screening levels for residential soil; 2) One sample from the marshy area near the facility had cobalt concentrations that exceed the residential soil screening level and ambient soil concentrations in the area; 3) One sample from the residential area southeast of the facility had PAH concentrations that exceeded residential screening levels. OEHHHA noted that elevated concentrations of cobalt and PAHs may or may not be fire related. Additional post-screening sampling and testing was recommended at the latter two sampling locations to establish potential for health impacts (OEHHHA 2025). The results of this additional testing had not been published as of July 14, 2025.

In other marsh soil samples taken at San Jose State University's Moss Landing Marine Laboratories (MLML), soil analysis measured a dramatic increase in surface concentrations of nickel, manganese and cobalt, all of which are used in NMC batteries (SJSU 2025).

Surface water samples taken at the Elkhorn Slough Reserve located north of the Moss Landing facility detected several metals including barium, chromium, cobalt, nickel, vanadium, and zinc. The levels of barium and nickel did not exceed acceptable screening levels for human recreational water activities, including ingesting water or eating aquatic organisms. The other metals that were detected do not have applicable screening levels for recreational exposure. No immediate public health recommendations were made for surface water samples (OEHHHA 2025). Similarly, during the Escondido battery fire in San Diego County in 2024, water quality sampling of runoff from the applied fire water found trace amounts of metals like zinc, copper, and barium at levels typical in an urban environment. No toxic metals such as lead, cadmium, or mercury were detected (Escondido 2024b).

Following the Moss Landing event, drinking water samples were taken by the Monterey County EHB and tested in the lab. The results indicated that the water quality was consistent with historical sampling information and did not exceed the applicable drinking water standards. The County of Santa Cruz Environmental Health Division conducted surface water and agricultural sampling in areas of the County north of the Moss Landing facility and the lab tests did not suggest elevated public health risks or food safety concerns (Monterey Co. 2025d).

The smoke from the Moss Landing fire created a smoke plume that covered the nearby areas of Monterey and Santa Cruz counties. Residents within the smoke plume reported physical symptoms ranging from sore throats, headaches, rashes, and shortness of breath (NBC Bay Area 2025).

In summary, monitoring and testing conducted during and after BESS fire incidents to date indicate that air and water quality standards were not exceeded by those events, indicating there is a low potential for exposure to toxic air emissions from such events. However, exposure to combustion smoke emissions from battery fire is a health concern. In the unlikely case of a thermal runaway or fire incident at a BESS, there could be smoke that could last for many hours, even if the incident is limited to a single container.

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Regulatory Response

Currently, two model fire safety codes address grid battery installations. Most states, including California, have adopted the International Fire Code (IFC) as the basis for their state fire codes, including provisions for large battery installations (IFC Section 608), while the remainder adhere to the National Fire Protection Association's standard, NFPA 855 (ICC 2024, NFPA 2023). Committees of battery experts update these codes on a three-year cycle with the best new information (Spector 2025).

In 2018 the IFC added section 1206 which specifically covered large battery storage projects for the first time. IFC section 1206 set fire safety standards for energy storage systems, including setback, ventilation, cooling, and fire extinguishing requirements. Construction at the Moss Landing facility was nearing completion in 2020 when the State of California began enforcing the 2018 IFC. By 2021, the IFC had been updated again, with battery energy storage requirements now listed under Section 1207. The 2021 IFC update was the first to define different requirements for indoor and outdoor systems and include requirements for commissioning and decommissioning. The last update to the IFC was completed in 2024. The current IFC fire safety standards provide a vastly improved and rigorous set of fire safety standards and requirements which were not in effect when the Vistra Moss Landing BESS was constructed.

The current codes and standards applicable to BESS facilities are described in detail below.

Applicable Codes and Standards that Mitigate Potential BESS Hazards

California Fire Code (CFC)

The 2022 CFC adopts the 2021 IFC as the state's fire code. The current Fresno County Ordinance Code adopts the 2022 California Fire Code (CFC), which is based on the 2021 IFC with supplements and additions (Fresno County 2024c). The 2024 IFC is expected to be adopted by the state in 2025, and by Fresno County in 2026 (CBSC 2025). The future updated 2027 IFC is expected to be completed and adopted by the time first VCIP BESS projects begin construction in 2029.

2024 IFC section 1207 Electrical Energy Storage Systems (ESS) addresses fire safety for BESS. Section 1207.1.6 requires a failure modes and effects analysis. Section 1207.1.7 requires a large-scale fire test of a representative ESS in accordance with UL 9540A. Section 1207.3.4 requires an energy storage management system that monitors and balances cell voltages, currents and temperatures, and provides for automatic shutoff when unsafe conditions are detected. Section 1207.4.7 requires the installation of exhaust systems for toxic gases. Section 1207.5.1 requires a minimum of 3 feet of separation between ESS groups. Section 1207.5.4 requires automatic smoke detection systems or radiant energy sensing systems with connection to a remote alarm system. Section 1207.5.5 requires automatic fire suppression systems, with alternative automatic systems required for ESSs that utilize water-reactive materials. Section 1207.5.6 limits the size of BESS containers to 53 feet by 8 feet by 9.5 feet high. Section 1207.5.7 requires that areas within 10 feet of a BESS container be cleared of combustible vegetation and other combustible growth. Section 1207.6.1 requires mechanical exhaust ventilation of flammable gas exceeding 25 percent of the volume of the room, as measured by a gas detection system with automatic trouble signaling to a remote alarm in the event of failure. Section 1207.6.2 requires that areas containing free-flowing liquid electrolyte or hazardous materials shall be provided with spill control and neutralization (no flow batteries are anticipated for the VCIP, and BESS do not include liquids). Section 1207.6.3 requires explosion control (e.g., automatic release of gases through vents in top of container). Section 1207.6.5

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requires the BESSs be provided with a listed device or other approved method to prevent, detect and minimize the impact of thermal runaway (ICC 2024).

National Fire Protection Association (“NFPA”) 855

The NFPA 855 *Standard for Installation of Stationary Energy Storage* is similar and parallel to the IFC Section 1207, but has not been adopted as the fire codes for California or Fresno County. However, most of NFPA 855 has been adopted in IFC 1207, so the BESS-related content of the IFC is largely harmonized with NFPA 855 (EPRI 2023).

UL Qualification Standards for BESS

U.S. fire and electrical codes require that energy storage systems be tested by a Nationally Recognized Testing Laboratory (a private-sector organization recognized by the OSHA) and certified to meet consensus-based test standards. The leading testing organization is UL Solutions. For BESS, the standard is UL 9540, *Energy Storage Systems and Equipment*, which was initially published in 2016. The most recent third edition, published on June 28, 2023, was last revised on March 7, 2025. UL 9540 is a safety standard for the construction, manufacturing and performance testing and marking of battery energy storage systems. UL 9540 defines electrical, mechanical, fluid containment, and environmental performance tests, along with system safety tests. As part of UL 9540, lithium-ion based energy storage systems are required to meet the standards of UL 1973 for battery systems and UL 1642 for lithium batteries. UL 1973 requires tests for electrical, electromagnetic, mechanical, environmental and failure tolerance. UL 1642 requires evaluation of the battery cell’s performance when subject to adverse electrical, mechanical, environmental, and projectile conditions. Additionally, all utility interactive systems are required to be listed and labeled in accordance with UL 1741 for inverters, converters, and controllers. Essentially, under UL 9540, all components within the BESS system are evaluated and qualified to an individual standard, ensuring that all the components in the system work together. Once all the components are qualified individually, the system can be certified to UL 9540 standard (UL 2025a).

IFC Section 1207 requires a large-scale fire test of a representative BESS in accordance with UL 9540A. UL 9540A testing is performed by the battery manufacturer/vendor to analyze the ability of the system design to prevent thermal runaway propagation and mitigate fire risk. Some of the measures to mitigate fire risk include thermal management system, fire detection system, alarms, deflagration control (i.e., reduction of explosion potential through mechanical exhaust ventilation), and remote monitoring. Specifically, UL 9540 now limits the maximum energy capacity of BESSs (which includes NMC and LFP batteries) to 50 kWh unless they comply with UL 9540A fire test criteria. UL 9540A is an evaluation method that forces a thermal runaway event to test the flammability of cells, potential for fire to spread from unit to unit, capacity for thermal runaway to spread from one cell to others within a module, and to analyze the ability of the system design to mitigate such an event and prevent propagation (UL 2025b). The latest technology in battery storage has established a design such that in the unlikely scenario of a thermal event, the thermal event would be contained to a single battery container and not result in thermal runaway that could affect neighboring units. The fire protection and prevention technology employed in battery storage units based on battery models currently available on the market is specifically designed to prevent a thermal event.

Despite UL 9540’s initial introduction in 2016, it was not until the release of IFC 1206 in 2018 and NFPA 855 in 2019 that UL 9540 certification was mandated as a condition for the installation of energy storage. This is another instance of an additional safety standard that was not mandated at the time of the Vistra Moss Landing facility’s construction in 2018-2020 (Spector 2025).

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CPUC General Order No. 167-C

On March 13, 2025, the CPUC adopted General Order (GO) 167-C to implement SB 38 (2022) and SB 1383 (2023) which address the need for safety oversight of battery energy storage facilities. SB 38 requires each battery energy storage facility owned by an electrical corporation or located in the state to prepare an emergency response and emergency action plan that covers the premises of the battery energy storage facility and submit the plan to the county and city where the facility is located. It also requires the owner or operator of the facility to coordinate with the local emergency management agencies, unified program agencies, and local first response agencies. SB 1383 directs the Commission to implement and enforce maintenance and operation standards for energy storage facilities owned by an electrical corporation or located in the state. CPUC GO 167-C applies to all BESS facilities in the state with a capacity of 50 MW or greater and would therefore apply to all potential BESS facilities under the VCIP.

Potential BESS Model to be Utilized in VCIP Facilities

Although the specific model of BESS that will be selected by various individual VCIP energy storage projects cannot be predicted, it is likely that most BESSs would utilize LFP chemistry which is becoming widely adopted due to its stable chemistry, favorable thermal runaway characteristics, and fire safety. There is a high probability that most VCIP BESS systems would consist of Tesla Megapacks, or a similar system. These BESS models have been manufactured since 2019, and have been made in Lathrop, California since 2021. Tesla Megapacks have been deployed in many projects including two solar project within the District (e.g., Solar Blue, and Castenea Solar in Kings County). Since 2021, Tesla Megapacks have been involved in four reported fires worldwide, three of which occurred in Australia, and the fourth was in Moss Landing in 2022 (discussed above). In two cases, the fires were confined to one unit, and in another instance the adjacent unit was ignited, and in the fourth case an adjacent unit was damaged (CPUC 2023a).

The experience with fire incidents has resulted in improvements in design and safety features which have been incorporated into Tesla's Megapack 2 XL model which was introduced in 2024. The following safety discussion is from Tesla's "Megapack Safety Overview" (Tesla Inc. 2022).

"All Tesla products also undergo rigorous testing at the module level. While standards such as UL 1973 and IEC 62619 ensure propagation resistance to single-cell thermal runaway, testing has shown that Megapack battery modules are resistant to multiple co-located cells sent into runaway at the same time. This greatly mitigates the risk of a thermal event.

At the system level, Megapack is designed with a combination of dedicated runaway gas igniters and overpressure vents built into the roof that passively mitigate the risk of deflagration hazards (i.e., pre-explosion conditions) in case of unlikely accumulation of flammable gases due to arc flash events or thermal runaways. In the unlikely event of a fire, rigorous full-scale fire testing has shown that Megapack performs in a safe and controlled manner, consuming itself slowly and without explosive bursts, projectiles, or unexpected hazards. The vents are designed to direct all gases, smoke, and flame out of the top of the Megapack, minimizing risk to nearby response personnel and exposures. In the event of a fire at a Megapack site, the fire service will be able to manage the event with standard fire service response equipment. The cells used in Tesla products do not contain solid metallic lithium and thus do not react with water. When required by local code, Tesla recommends fire detection at the site level with the use of third-party thermal imaging cameras that can detect fires on site."

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Summary of Potential Impacts Associated with BESS

The primary factor that contributed to the severity of the catastrophic battery fire at Vistra's Moss Landing facility in January 2025 was the high concentration of thousands of uncontained high energy density battery cells in an enclosed and poorly ventilated building. Current BESS installations consist of numerous battery containers where fires would be confined to one container without propagating. In contrast to Vistra's Moss Landing facility, the typical solar/BESS project under the VCIP would be expected to have 250 separate prefabricated battery containers. Use of these separate containers limits the extent of fire and release of smoke and toxins. (The 2025 Vistra Moss Landing Battery fire consumed the equivalent of 300 modular battery containers.) Lithium ion batteries such as those anticipated to be utilized in potential VCIP BESS projects are generally safe and unlikely to fail. In the unlikely event of a battery fire, the effectiveness of emergency preparedness and response is essential for minimizing impacts.

The codes and standards governing installation and operation of BESS are evolving rapidly as experience with potential hazards is gained and allows development of effective safety measures to be incorporated into fire codes and testing standards. As discussed above, the codes, standards, and best practices for BESS safety and emergency response have advanced sufficiently that it can be concluded that the implementation of existing laws, codes, standards, and industry-standard practices at the project level would avoid or reduce to less than significant the potential health, safety, and environmental hazards associated with BESS operation.

Specifically, fire protection design for VCIP BESSs would comply with Section 1206 Electrical Energy Storage Systems, which adopts the National Fire Protection Association (NFPA) Standard for the Installation of Stationary Energy Storage Systems (NFPA 855). Depending on technology, UL, an independent engineer's test method, would certify that the batteries to be used are manufactured in accordance with UL-9540A, an industry-standard *Test Method for Evaluating Thermal Runaway Fire Propagation in Battery Energy Storage Systems*. Compliance with these standards and certification includes a system design that detects high temperatures at the battery cell or battery module level and automatically shuts down the battery rack. The thermal management systems would be connected to an uninterruptible power supply.

In addition to current code safety requirements, it is recognized that local conditions unique to each BESS project may indicate the need for additional safety measures under given conditions and circumstances. Therefore, Mitigation Measure (MM) HAZ-1 is set forth below to ensure that appropriate adjustments can be made to respond to site specific and local conditions in the context of advancements in applicable codes and standards. With the application of MM HAZ-1 at the project level, the potential health, safety, and environmental impacts associated with BESS facilities installed and operated under VCIP would be avoided or reduced to *less than significant*.

Mitigation Measure HAZ-1: Hazards Associated with BESS

To ensure that potential health, safety, and environmental hazards associated with the operation of Battery Energy Storage Systems under the VCIP are avoided or reduced to less than significant, the following measures are applicable at the project level:

- 1) **Code Compliance in Facility Planning and Design:** All BESS systems and components shall be designed and constructed in accordance with the most up-to-date applicable provisions of the California Fire Code, as supplemented and amended by the Fresno County Fire Code, and administered by the Fresno County Fire Protection District (FCFPD).

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- 2) **Coordinate with FCFPD (and other relevant local agencies) in Facility Planning and Design:** To ensure compliance with all applicable objective facility planning and design standards, in the early stages of facility planning and design, the project proponent shall coordinate with the FCFPD (and other relevant local agencies) on the details of facility design, taking into account climatic and environmental conditions and proximity to sensitive receptors, and incorporating lessons learned from previous incidents involving BESS. Depending on site location and local conditions, this coordination shall inform decisions regarding the application of objective facility planning and design standards, such as the need for setbacks or perimeter walls, the design of fire suppression systems including minimum volume of water storage and minimum water pressure for fire suppression, emergency vehicle access, in addition to other relevant facility design considerations for reduction of potential hazards to health and safety to less than significant.
- 3) **Coordination with FCFPD (and other relevant local agencies) in Preparing Emergency Preparedness and Response Plans:** In accordance with CPUC GO 167-C, the project proponent shall establish and implement Maintenance and Operation Standards for Energy Storage Systems, and Emergency Response and Emergency Action Plans for Energy Storage Systems. The project proponent shall coordinate with FCFPD (and other relevant local agencies) in the preparation and implementation of these objective standards and associated plans. For installation and maintenance, the plans shall include provisions to ensure proper installation, regular inspections, real-time monitoring systems to identify any defects, and malfunctioning systems to prevent potential failures that could result in fire incidents. For emergency response, the plans shall include provisions for the establishment of proactive and effective communication links, sharing of technical knowledge unique to BESS technology and safety issues, and regular training and education programs specific to potential BESS safety and incident response. In addition to the required elements of the Emergency Response and Action Plans, the Plans shall include the following provisions: 1) the Plans shall be submitted to the District and FCFPD no less than 60 days prior to construction; and 2) the project owner/operator shall notify the District and FCFPD within one hour, after it is safe and feasible, of specified incidents, such as activation of onsite emergency detection system.
- 4) **Post-Fire Environmental Monitoring.** The project proponent shall develop an air quality and water quality sampling plan to address potential container fires at the BESS. The plan shall include actions to implement so that appropriate air quality measurements can be taken immediately/automatically on-site during a fire and off-site measurements can be taken in real time to identify areas that are affected by smoke from the fire vs. areas that are not affected by the smoke plume from the fire. The project proponent shall have a contract in place (as part of the sampling plan) with an air testing company (or the local Air District) that can respond within hours to collect air samples from a thermal runaway event. The project proponent shall submit the proposed sampling plan to the District and FCFPD 45 days prior to proposed BESS operations for review, revisions, and approval prior to BESS operations. In the event of a fire incident at a BESS facility, the FCFPD shall immediately request that the U.S. EPA and SJVAPCD conduct continuous air quality monitoring during and after the fire incident, and shall request that DTSC and County Environmental Health conduct surface water, soil, and drinking water sampling and testing for the presence of contaminants in actionable concentrations. Based on the results of the testing for contaminants, the health and safety agencies shall issue public health advisories and clean-up orders as appropriate.

Significance After Mitigation: Less-than-significant impact.

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Project-level application of the above mitigation measures during planning, design, and construction of VCIP BESS projects would reduce potential health, safety, and environmental hazards to less than significant.

Impact HAZ-3 Hazards Related to Past and Present Agricultural Operations

The ground disturbing activities associated with implementation of the VCIP Energy Resource and Infrastructure Plans pose potential environmental health hazards by mobilizing petroleum products and agricultural chemicals that may be present in the soil. Any potential hazards would be addressed by environmental assessments and completion of any required remediation for each project site prior to development. (*Less-than-Significant Impact with Mitigation*)

VCIP Energy Resource Plan – Analysis of Impact HAZ-3

Storage, Handling, and Use of Hazardous Materials in Agricultural Operations

As discussed in *Section 4.9.1. Environmental Setting*, potential sources of hazardous materials contamination are typical of agricultural operations, including the following: ASTs, 55-gallon drums, trailers, and other containers for fuels, lubricants, fertilizers, and pesticides; agricultural wells and pump systems; septic systems, waste disposal sites, waste ponds, detention ponds, tailwater ponds, or burn piles or pits; and pole-mounted electrical transformers. There is no record of any spills, leaks, incidents, or violations within the Plan Area. Any spilled chemicals, petroleum products or other hazardous waste that may remain in the soil and groundwater in hazardous concentrations can be mobilized by ground disturbing activities, and this could present a health hazard to construction workers during installation of the solar facilities, and a potential health hazard to operational staff at the completed facilities. This would represent a *potentially significant impact*.

Residual Agricultural Pesticides in Soils

Past and current agricultural practices on the VCIP project sites include the application of agricultural pesticides and herbicides. The potential for agricultural chemicals to be present in hazardous concentrations due to 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 soon 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 Persistent Organic Pesticides (POPs), 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 10 percent of its original strength by 2025.

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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 that would require regulatory action.

It is likely that legacy OCPs or POPs were applied within the Plan Area before they were banned in the 1970s. If so, there is a low likelihood that soils within the Plan Area are contaminated, except possibly at former chemical mixing sites where the potential for contamination is higher. Some farmlands acquired by the District in the early 2000s and retired from irrigated agriculture have been subject to soil tests in order to determine if the soils contained any significant concentrations of environmentally persistent agricultural chemicals. In all cases, the analytical results indicated that the soils are well below regulatory screening levels for organochlorine pesticides, as well as Toxaphene and the metal Arsenic. It is noted however that soil contamination from agricultural chemicals was detected at the former Bullard Avenue Airstrip in the Plan Area, as discussed in detail under Impact HAZ-8 below.

Recent Use of Agricultural Chemicals

Any pesticides applied in the Plan Area in the recent past would have consisted of non-persistent compounds that degrade rapidly (within a few days or weeks) after application. The longest-lived pesticides that may have been applied include paraquat and glyphosphate (Roundup), which have half-lives of approximately 1,000 days and 47 days, respectively (UCD 2025, NPIC 2022). As such, the pesticide concentrations would likely degrade to low levels between the time of last application and the time of VCIP development. 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 where DTSC has had oversight. As such, 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.

Phase I Environmental Site Assessments (ESAs)

To investigate the potential presence of site contamination at each VCIP development site, Phase I ESAs will be undertaken in conjunction with each project consistent with Fresno County General Plan Policy HS-F.4 related to soil and groundwater contamination reports for projects where past site use suggests environmental impairment. Phase I ESAs are also required for due diligence in property transactions and are required to provide liability protection under CERCLA. Phase I ESAs have been conducted for all past solar projects in Fresno and Kings counties prior to development, and are also specified in Mitigation Measure HAZ-2 below. The Phase I ESAs would consist of the following: review of available regulatory lists from state and federal agencies; 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 Fresno County Division of Environmental Health Services (EHS) files; and interviews with persons with knowledge of present and past uses of the property. These site-specific ESAs would identify the need for any follow-up environmental assessments (Phase II ESAs), such as soil sampling and testing for contamination. The Phase II ESAs would include site-specific cleanup recommendations, if appropriate, for each VCIP project. These recommendations would be

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included as conditions of approval for each VCIP project, as applicable. With the implementation of Mitigation Measure HAZ-2, and follow-up cleanup actions for any soil or groundwater contamination, as stipulated in Phase II ESAs and follow-up investigations for site contamination, the potential VCIP solar and energy storage project impacts related to hazardous materials from past agricultural uses would be *less than significant*.

VCIP Infrastructure Plan – Analysis of Impact HAZ-3

Construction of the VCIP collection substations, gen-tie lines, and connecting transmission lines would involve ground disturbance associated with site clearance, grading, and excavation for substation sites, transmission towers, access roads, staging and pulling sites. As described in Chapter 2. *Project Description*, it is estimated that the total area of temporary ground disturbance for the infrastructure projects would be approximately 2,860 acres. The affected lands may be subject to contamination from past or recent agricultural use, and this would be investigated by site characterization studies in Phase I ESAs and any follow-up investigations prior to construction, as specified in Mitigation Measure HAZ-2. If areas of contamination are discovered, these would need to be cleaned up prior to construction. Therefore, with the implementation of Mitigation Measure HAZ-2, the potential hazardous materials impacts to VCIP infrastructure projects from past agricultural use would be *less than significant*.

Conclusion

With the application of Mitigation Measure HAZ-2 at the project level, implementation of the proposed VCIP Energy Resource and Infrastructure Plans would not create a significant hazard to the public or environment due to hazardous materials contamination from past agricultural use in the Plan Area. Therefore, the overall impact in this regard would be *less than significant*.

Mitigation Measure HAZ-2: Complete Phase I Environmental Site Assessments

Phase I ESAs shall be completed by project proponents of individual projects in the VCIP Plan Area. The Phase I ESAs shall be performed in conformance with the scope and limitations of ASTM E 1527-13 “Standard Practice for Environmental Site Assessments” and EPA “Standards and Practices for All Appropriate Inquiries,” 40 CFR Part 312. If potential hazardous materials contamination is identified in a project Phase I ESA, and the Phase I ESA recommends further review, the project proponent shall retain a Registered Environmental Assessor or other qualified professional to conduct follow-up sampling to characterize the contamination and to identify any required remediation that shall be conducted. These recommendations shall be implemented, and the site shall be deemed remediated by the appropriate agency (DTSC, Fresno County Department of Environmental Health Services [FCDEHS]).

Significance After Mitigation: Less-than-significant impact.

Project-level application of the above mitigation measure during construction and decommissioning of VCIP energy resource and infrastructure projects would reduce potential hazardous materials impacts related to past and present agricultural operations to less-than-significant.

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Impact HAZ-4. Worker Exposure to Valley Fever Fungal Spores

The soils of the VCIP 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. Implementation of Dust Control Plans, worker awareness training, and respiratory protection programs, as required by existing laws and regulations, would avoid or substantially reduce the health risk to construction workers from potential exposure to Valley Fever during implementation of the VCIP Energy Resource and Infrastructure Plans. (*Less-than-Significant Impact*)

The VCIP Plan Area includes lands that may harbor the fungus that causes Valley Fever (*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, including the western area of Fresno County. In 2023, Fresno County had 567 cases of Valley Fever, or 56 cases per 100,000 population, which is 2.4 times the rate for California as a whole (CDPH 2024a). 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 2025, CDPH 2024b). 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 2021).

The fungal spores that cause Valley Fever are most prevalent in undisturbed soils. Since the land in western Fresno County consists predominantly of disturbed agricultural land, the risk of infection due to potential VCIP development is considered low. However, 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 of VCIP projects when soils are temporarily exposed and disturbed by grading and excavation activity.

Cal/OSHA administers state and federal laws that require employers to address 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 San Luis Obispo County after workers became infected with Valley Fever. The citations included the following violations: failure to implement appropriate control measures for coccidioidomycosis as part of their injury and illness prevention programs, failure to provide adequate employee respiratory protection, and failure to report serious employee illnesses and hospitalizations resulting from coccidioidomycosis (CDC 2015).

Section 6709 of the California Labor Code, added by AB 203 in 2019, requires awareness training on Valley Fever to all workers subject to substantial dust disturbance. The training is to provide information on exposure prevention methods, recognition of symptoms, treatment, and other relevant information.

Construction of the VCIP energy and infrastructure projects would involve temporary ground disturbance activity resulting in potential release of Valley Fever fungal spores that may be present in the soils.

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Construction workers who have not developed immunity to Valley Fever through previous exposure would be at risk of infection and serious illness. To control dust, each VCIP project would implement an approved Dust Control Plan as required by the San Joaquin Valley Air Pollution District under District Regulation VIII (see Section 4.3. *Air Quality*, Impact AQ-1 for a full list of required dust control measures). Each VCIP project would be required to provide awareness training specifically focused on Valley Fever, and would also be required to evaluate respiratory hazards in the workplace, and if present, to develop and implement a respiratory protection program. On other solar projects in the District, this has resulted in requirements to provide respirators to construction workers. With implementation of Dust Control Plans, worker awareness training, and respiratory protection programs, as required by existing laws and regulations, the health risk to construction workers from potential exposure to Valley Fever during implementation of the VCIP Energy Resource and Infrastructure Plans would be *less than significant*.

Mitigation Measures: No mitigation is required.

Impact HAZ-5. Hazards from Abandoned Oil and Gas Wells

The former oil and gas wells within the VCIP Plan Area pose a risk of potential groundwater contamination and a risk that toxic gases would be released at the well sites which would pose a potential hazard to the public and the environment. Compliance with all applicable regulatory requirements and preparation of soil and groundwater contamination studies, and site remediation if necessary, would avoid or substantially reduce the potential hazard to the public and the environment. (*Less-than-Significant Impact with Mitigation*)

As discussed in Section 4.9.1. *Environmental Setting*, hundreds of former oil and gas wells exist within the VCIP Plan Area, many of which were dry holes, and most of which were plugged and abandoned in accordance with state law. There are no remaining actively producing oil or gas wells within or near the Plan Area. There are several new exploratory wells within the Plan Area, however, including two wells southwest of the I-5/SR-145 interchange and three new wells to the west of Five Points. These wells are outside of potential DFA lands.

Of the hundreds of former oil and gas wells in the Plan Area, seven wells are listed as “idle” by CalGEM, all of which are outside of potential DFAs. Two of the idle wells are located along SR-198 near S. Butte Avenue and are 0.3 and 1.2 miles from the nearest DFA, respectively. A cluster of five idle wells is located two miles west of Five Points and are 0.1 to 0.3 miles from the nearest potential DFA. None of the idle wells are near the VCIP connecting transmission corridor. These seven wells may represent orphan wells that have been deserted by their operators (CalGEM 2025a). Deserted wells pose a threat to groundwater quality, and there is also the potential for hydrocarbons such as oil, methane, or toxic gases (aromatic hydrocarbons or hydrogen sulfide) to migrate up through these wells and to release to the environment. For idle and plugged/abandoned wells located within development sites, Phase I ESAs, as specified in Mitigation Measure HAZ-2, and follow-up studies (Phase II ESAs) undertaken prior to site development would include soil sampling and testing in the vicinity of the former oil and gas wells to determine whether petroleum hydrocarbons and volatile organic compounds are detectable which may have resulted from leaks or spills at the well sites. If so, site remediation

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may be required prior to site disturbance in the vicinity of the well, and the well itself may need to be properly abandoned or re-abandoned in accordance with current CalGEM requirements.

For developments proposed on lands where idle or plugged/abandoned wells are present, CalGEM requires that physical access to the well be maintained in the event abandonment or re-abandonment becomes necessary in the future. This includes providing sufficient clear area for equipment operation and maneuvering, as well as unimpeded access to the well sites from a public road.

In accordance with CalGEM requirements, VCIP energy and infrastructure projects would be designed to provide any idle or abandoned oil/gas wells on site with secure separation from project facilities and with direct physical access to the well sites for equipment and materials, if needed. Thus, the potential for VCIP projects to have a physical impact upon the abandoned or idle oil/gas wells on the site is not substantial. Also, given the potential for oil, methane, or toxic gases to migrate up through idle or plugged/abandoned wells and to release to the environment, soil contamination studies would be conducted prior to ground disturbance, as specified in Mitigation Measure HAZ-2 consistent with Fresno County General Plan Policy HS-F.4. If field inspections and soil analyses indicate that there is residual contamination associated with the idle or abandoned oil/gas wells on a given VCIP project site, remedial action would be required as recommended in the contamination study. With the application of Mitigation Measure HAZ-2, the potential hazard to project workers, other sensitive receptors, or the environment from residual contamination from the oil/gas wells would be *less than significant*.

Mitigation Measures: Implement MM HAZ-2.

Significance After Mitigation: Less-than-significant impact.

Impact HAZ-6. Safety Hazards Associated with Existing Natural Gas and Petroleum Pipelines and Power Transmission Lines

The existing natural gas and petroleum pipelines and electrical transmission lines that are present within the VCIP Plan Area may pose safety hazards to construction activities in proximity to those facilities. Compliance with existing regulations and safety protocols would avoid or substantially reduce these risks. (*Less-than-Significant Impact*)

Existing Natural Gas and Crude Oil Pipelines

As described in Section 4.9.1. *Environmental Setting*, a major high-pressure natural gas transmission pipeline runs through the Plan Area along the east side of I-5, with several gas transmission lines branching off this trunk line to the east and north. A crude oil pipeline runs along the base of the Diablo Range west of I-5 along the western margin of the Plan Area. The concern with pipelines, especially high-pressure natural gas pipelines, is the risk of explosion caused by inadvertent contact by excavating equipment.

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It is anticipated that these transmission pipelines would pass through or alongside some of the potential VCIP solar and energy storage project sites and infrastructure sites, and that pipeline crossings over these pipelines would be required. Any such work would be subject to the applicable provisions of the California Government Code, which sets forth detailed procedures for protecting underground infrastructure and specifies substantial financial penalties for failure to comply (Government Code sections 4216-4216.9). Government Code section 4216.2 provides that an excavator must contact a regional notification center (e.g., Underground Service Alert [USA]) at least two days prior to excavation near any subsurface installation. The existing warning markers along the pipeline alignments indicate only the general location of the pipeline. The USA is then required to notify the utilities that may have buried lines within 1,000 feet of the planned excavation. Representatives of the utility are required to field mark the specific location of their facilities within the planned work area before excavation can commence. Since a high-pressure natural gas pipeline is deemed a “high priority subsurface installation” under Government Code section 4216, the excavator and pipeline operator are required to conduct an on-site meeting to determine actions required to verify the location of the pipeline. If the planned excavation is to occur within two feet of the field marked pipeline location, the exact location of the subsurface pipeline shall be determined by excavation with hand tools only, prior to using power-driven excavation equipment in the pipeline vicinity. In addition, it is anticipated that a transmission crew from the pipeline operator would stand by during construction activity near the pipeline. General workplace safety would be ensured through compliance with Cal/OSHA’s standard safety requirements and protocols. With implementation of applicable laws, regulations, and protocols in conjunction with work near the transmission pipelines, the potential hazards associated with the pipelines would be *less than significant*.

Existing High Voltage Power Transmission Lines

As described in Section 4.9.1. *Environmental Setting*, several high-voltage transmission lines pass through the Plan Area. These include two parallel PG&E 230-kV transmission lines and a PG&E 500-kV line that runs alongside the 230-kV lines, plus a WAPA 500-kV transmission line that runs through the southwest portion of the Plan Area. It is anticipated that at least one VCIP transmission segment and one or more gen-tie segments would cross the PG&E 230-kV and 500-kV transmission lines, but not the WAPA 500-kV transmission line.

Any construction work within an existing PG&E transmission line easement would require coordination in advance with, and authorization by, PG&E, and would require implementation of utility notifications and other protocols as well as clearances and design criteria prescribed by CPUC General Order 95. Construction safety protocols would implement Cal/OSHA requirements to ensure safety of workers during work within the easement. With implementation of these design criteria and standard safety protocols in conjunction with work near the existing transmission easements, as required, the potential hazards associated with the existing transmission lines would be *less than significant*.

Potential safety hazards posed by the construction of VCIP facilities across or near existing natural gas pipelines and power transmission lines would be avoided or substantially reduced by standard safety requirements and protocols required by existing laws and regulations. Therefore, the potential safety impact related to work in the vicinity of these facilities would be *less than significant*.

Mitigation Measures: No mitigation is required.

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Impact HAZ-7. Hazards or Hazardous Materials within One-Quarter Mile of Schools

One elementary school is located within one-quarter mile of a potential VCIP Development Focus Area where a solar PV generating facility and/or energy storage facility would be constructed. Compliance with existing laws, regulations, codes, protocols, and standards required during construction and operation of the VCIP solar and energy storage facilities would ensure that hazardous materials used at VCIP project sites are transported, handled, stored, and disposed of in a manner that would avoid or substantially reduce the risk of release of hazardous materials. (*Less-than-Significant Impact*)

Cantua Creek Elementary School is located within the Plan Area on W. Clarkson Avenue in Cantua Creek. Westside Elementary School is located within the Plan Area on W. Excelsior Avenue in the community of Westside. Four other schools are located within one-quarter mile of the VCIP boundary, including McCabe Elementary and Mendota High School in Mendota and Huron Elementary, Huron Middle School, and Chestnut High School in Huron. Except for Cantua Creek Elementary School, none of these schools are located within one-quarter mile of a potential VCIP DFA, connecting transmission corridor, or collection substation. The Cantua Creek Elementary School is located adjacent to a potential DFA where a VCIP solar PV facility and/or energy storage facility may be constructed. As discussed under Impact HAZ-1, however, compliance with all applicable legal requirements, protocols, and standards during construction and operation of the VCIP solar and energy storage facilities would ensure that any hazardous materials used at this potential VCIP project site are transported, handled, stored, and disposed of in a manner that would avoid or substantially reduce the risk of release of hazardous materials. Therefore, any potential impacts to the school would be *less than significant*.

Mitigation Measures: No mitigation is required.

Impact HAZ-8. Any Listed Hazardous Materials Sites on or Near Plan Area

Upon the cleanup and regulatory closure of the two contamination sites within and adjacent to the proposed VCIP DFAs, there would be no contamination sites within the VCIP development areas that would create a significant hazard to the public or the environment. (*Less-than-Significant Impact with Mitigation*)

As discussed in Section 4.9.1. *Environmental Setting*, there are numerous hazardous contamination sites in Fresno County, with several occurring within the Plan Area. Contamination cases are administered and tracked by the DTSC which maintains the Hazardous Waste and Substances Site List (Cortese List) pursuant to Government Code section 65962, which is publicly accessible on DTSC's EnviroStor database. In addition, the SWRCB maintains the GeoTracker database which is focused on groundwater contamination cases. These databases indicate four open contamination cases subject to regulatory action within the Plan Area: 1) Bullard Avenue Airstrip, located within a potential DFA at the north end of the Plan Area; 2) Airway Farms – Five Points Ranch Shop located adjacent to a potential DFA; 3) TMT Chemical Company on Oakland Avenue, at least one {AM0013.1}

mile from a potential DFA; and 4) Airway Farms Duster Ranch near Huron, approximately 10 miles south of the nearest potential DFA (DTSC 2025b, SWRCB 2025). The status of each of these cases is described in Section 4.9.1. *Environmental Setting*.

The sites with the potential to affect VCIP development are the Bullard Avenue Airstrip and the Airway Farms – Five Point Ranch Shop. The potential contaminants at the Bullard Avenue Airstrip include aviation fuel, pesticides, herbicides, fumigants, Toxaphene, and waste oil. Prior to development of the property associated with this site for solar and/or energy storage facilities, site contamination studies would be undertaken as specified in Mitigation Measure HAZ-2 consistent with Policy HS-F.4 of the Fresno County General Plan regarding soil and groundwater contamination reports for projects where past site use suggests environmental impairment. This would include soil sampling and testing followed by remediation, if necessary, to remove the contaminants prior to development. At Airway Farms the contaminants consisted of gasoline and diesel fuel from above ground storage tanks which were removed in 2007. Prior to development on the adjacent DFA, soil and groundwater sampling and testing would be performed to determine the extent of any plume and whether it extends into the DFA. If so, the contaminated soil would need to be removed, and the contaminated groundwater would need to be remediated prior to development. The remediation of each contamination site would allow for regulatory closure of the respective cleanup cases.

With the cleanup of the two contamination sites within and adjacent to the VCIP DFAs, and the formal closure of the cleanup cases with the regulatory agencies, there would be no known contamination sites within the VCIP development areas that would create a significant hazard to the public or the environment. Therefore, the impact in this regard would be *less than significant*.

Mitigation Measures: Implement MM HAZ-2.

Significance After Mitigation: Less-than-significant impact.

Impact HAZ-9. Electromagnetic Fields (EMFs) from Electrical Facilities

Residents and workers in the vicinity of the planned VCIP transmission lines, gen-tie lines, and substations could be exposed to Electromagnetic Fields (EMFs) emitted by those facilities. These infrastructure facilities therefore are planned to be routed, located, and designed in a manner to ensure that the nearest residents and workers would not be exposed to long-term EMF levels any greater than existing ambient or background levels. (*Less-than-Significant Impact with Mitigation*)

Introduction

All electrical devices and conductors emit low frequency electromagnetic fields (EMFs). 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 as distance increases 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

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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).

Scientific studies have not resulted in sufficient evidence to substantiate an association between EMF exposure from electric utility lines and adverse health effects in humans. It is the position of the 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 such 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 reasonable cost in light of the risk identified (CPUC 2006). A review of the scientific research by the WAPA similarly concluded that there is very little evidence of human health risk associated with EMF, and that exposure to normal field levels of EMF is not a major human health issue. Normal or average exposure is suggested to be the household background EMF of about 2 mG (WAPA 2005).

Currently, no federal or state exposure limits or significance thresholds 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. Several organizations have issued recommendations for permissible levels of EMF exposure from powerlines. The International Commission on Non-Ionizing Radiation Protection recommends a continuous exposure limit of 833 mG for the general public, and the American Council of Governmental Industrial Hygienists recommends a maximum occupational exposure of 10,000 mG (WAPA 2005).

In this context, 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 the strength of their electric fields, which diminish 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 2024). These distances are intended to provide general indications of average EMF levels, since actual levels fluctuate depending on amperage of the individual transmission lines and other variables.

The CDE setback requirements correspond well with measured EMF levels at numerous transmission lines of various voltages, as measured by the Bonneville Power Administration. 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 (ROW) (for a 100-foot ROW). For 500-kV lines, typical EMF levels drop off to 1.4 mG at 300 feet from the transmission centerline, 250 feet from the edge of the ROW (for a 100-foot ROW). As noted, the average household background EMF is about 1 to 2 mG (WAPA 2005).

In the absence of regulatory thresholds for EMF exposure, it is reasonable to apply average household background EMF of 2 mG for design guidance since these levels are not considered to pose a major human health issue. Based on the distances at which EMFs drop to average household levels, EMF levels would be reduced to ambient 2 mG at about 150 feet from a 230-kV transmission ROW, and 250 to 350 feet from a 500 kV transmission ROW. These distances are applied for guidance in the qualitative evaluation of potential EMF impacts resulting from the high voltage power lines planned for the VCIP Plan Area.

While EMFs are produced within substations, the spacing of the electrical equipment results in low measured field strengths outside the substation fence line (WAPA 2005). For purposes of this PEIR, however, it is assumed

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that the CDE's recommended setbacks for 230-kV and 500-kV transmission lines would apply to the 230-kV and 500-kV substations, respectively.

Discussion of EMF Exposure Associated with VCIP Projects

The proposed VCIP Infrastructure Plan includes high-voltage internal gen-tie lines (230 kV) and connecting transmission lines (500 kV). Construction workers at the VCIP solar and energy storage projects would likely work in proximity to high-voltage transmission lines for relatively brief periods and would be exposed to EMFs if the lines are energized at the time of construction.

The Plan Area gen-tie and transmission lines would consist of 230-kV or 500-kV lines with ROWs up to 350 feet wide. The transmission centerlines would be as near as 50 feet from the solar facility fence line. Based on the CDE's setback distances, it is expected that EMF levels from the 230-kV and 500-kV lines would fall back to approximate background levels at distances of 150 feet and 350 feet, respectively, from the outside edge of the transmission ROW.

Within the Plan Area, the nearest dwellings to the planned 500-kV connecting transmission corridor are located within the UC Westside Research Station on W. Oakland Avenue, west of SR-269. The nearest dwelling is located 630 feet from the transmission corridor centerline. Given a corridor width of 450 feet for two parallel transmission lines (with the ROW extending 225 feet from both sides of the centerline), the nearest dwelling would be 405 feet from the edge of the ROW. At this distance, EMF levels would drop off to background levels. Since all other dwellings in the Plan Area would be greater distances from the connecting transmission corridor, no existing dwellings would be exposed to EMFs at levels greater than ambient. There are no other sensitive receptors (e.g., schools) within at least one mile of a VCIP substation or transmission corridor, so those receptors also would not be exposed to EMFs greater than background levels.

The routes of the 230-kV gen-tie lines have not been identified in the VCIP Concept Plan since their alignments will depend on the specific locations and timing of VCIP solar and energy storage development, which are currently unknown and will only become clear when projects are brought forward for consideration. However, it is expected that the gen-tie lines would be routed so that the edge of the gen-tie ROW is located at least 150 feet from the nearest dwellings and other sensitive receptors, the distance at which EMF levels would drop off to ambient.

There is also a potential that permanent operational staff at the VCIP solar and energy storage facilities could be exposed to higher than ambient EMF emissions when they are working within about 150 feet of an existing 230-kV gen-tie line, or within about 350 feet of an existing 500-kV transmission line. 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. Average exposure levels would be about 19.5 mG for 230-kV facilities, and 29.4 mG for 500-kV facilities at the edges of the rights-of-way, both of which levels would be significantly lower than the recommended permissible occupational exposure levels of 10,000 mG. Additionally, most project work areas would be located farther than 350 feet from these EMF sources, so the overall amount of time construction workers would be exposed to EMFs above background levels would not be substantial. Permanent operational staff for the solar facilities would be stationed at the O&M buildings sited at least 350 feet from 500 kV lines and project substations, and 150 feet from 230 kV gen-tie lines. In addition, workers who would be on site periodically for maintenance or panel-washing duties would also spend short periods of time exposed to above-ambient EMF levels while in proximity to gen-tie lines, transmission lines, or substations. However, as

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most of their on-site work would take place at substantial distances from these facilities, these workers would not be subject to EMFs at greater than background levels.

In summary, no existing residences in the Plan Area are located in proximity to proposed VCIP substations, transmission lines, or gen-tie lines such that they would be subject to greater than ambient EMF levels. In addition, construction and operational workers occasionally would be subject to EMFs at higher than background levels, but the exposure levels would be far below recommended occupational exposure levels, and the periods of exposure would be relatively short in duration. However, since the potential gen-tie routes and locations of potential project substations have not been established, and the connector transmission alignments may be subject to adjustment at the project level, the distances where EMFs would fall to ambient levels are specified as setback distances in Mitigation Measure HAZ-3. With implementation of Mitigation Measure HAZ-3 at the project level, any potential impacts related to the exposure of residents, workers, and other sensitive receptors to EMFs due to implementation of the VCIP Energy Resource and Infrastructure Plans would be *less than significant*.

Mitigation Measure HAZ-3: EMF Setbacks

To ensure that EMF levels from VCIP infrastructure do not exceed ambient EMF levels at sensitive receptor locations, the following setback distances are applicable at the project-specific stage:

- 1) For 230-kV gen-tie lines and transmission lines, the edge of the right-of-way shall be set back a minimum distance of 150 feet from the nearest residential property line.
- 2) For 500-kV transmission lines, the edge of the transmission right-of-way shall be set back a minimum distance of 350 feet from the nearest residential property line.
- 3) For 230-kV project substations, the exterior fence line of the substation shall be set back a minimum distance of 150 feet from the nearest residential property line.
- 4) For 500-kV collection substations, the exterior fence line of the substation shall be set back a minimum distance of 350 feet from the nearest residential property line.

Significance After Mitigation: *Less-than-significant impact.* Project-level application of the above mitigation measures during design and construction of VCIP energy resource and infrastructure projects would reduce potential EMFs levels to less than significant.

Impact HAZ-10. PhotoVoltaic Heat Island Effect

Air temperatures at the VCIP solar facilities could increase due to the potential heat island effects of solar PV arrays. The best available scientific information indicates, however, that any potential increases in air temperature would be insubstantial and would dissipate within short distances from the solar facilities. (*Less-than-Significant Impact*)

There is a concern that the PV panels at VCIP solar facilities would create a photovoltaic “heat island” effect that would raise ambient air temperatures. This is similar to the “urban heat island” effect that occurs when cities replace natural land cover with dense concentrations of pavement, buildings, and other surfaces that absorb or

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retain heat and contribute to higher temperatures relative to undeveloped areas.¹ Few scientific studies have been conducted on this effect relative to large utility-scale solar facilities, although two important studies prepared to date provide some clarity on this issue.

The first study, called the “Columbia PV Heat Island Study,” found that the annual average air temperature in the center of a PV project can increase by up to 3.5°F above ambient temperatures measured at about 8 feet above ground surface (or 3 feet above the solar panels in the horizontal position), and that this thermal energy completely dissipates to the environment at heights of 16 to 64 feet above ground surface. The study also found that temperatures declined to within 0.54°F of ambient at about 984 feet from the perimeter of the solar facility. Further, the study found that the solar panels cool to temperatures below ambient air temperatures at night and would not induce a day-after-day increase in ambient temperature. The Columbia PV Heat Island Study concludes: “analysis of 18 months of detailed data showed that in most days, the solar array was completely cooled at night, and, thus, it is unlikely that a heat island effect could occur” (Fthenakis 2013).

The second study was conducted by researchers from the University of Arizona and the University of Wisconsin-Madison and published in the journal *Scientific Reports*. This study measured temperature differences between a solar PV facility, an urban parking lot, and an undeveloped desert parcel with little or no vegetation. The study found that the average annual temperature in the solar facility was about 4°F higher than the natural desert environment nearby indicating a photovoltaic heat island effect (Barron-Gafford 2016). However, this study did not measure temperatures outside the solar facility to determine how far the photovoltaic heating effect persisted, as had been done in the Columbia study which determined that temperatures returned to near-ambient within 16 to 64 vertical feet and about 1,000 horizontal feet of the facility. Additionally, the subject Arizona solar facility did not include ground vegetation beneath the solar panels. The Columbia study suggested that the solar panel heating effect could be reduced by revegetation under the solar panels, which would reduce heat island effects through the heat-dissipating effect of transpiration from vegetation.

A third study published in 2021 considered the temperature effects at locations outside two large solar facilities, one in the Mojave Desert and the other in China. The study found that both solar facilities created land surface temperature “cool islands” that extended up to 730 meters from the solar facilities with temperature reductions of up to 2.3°C (4.1°F) on adjacent lands. The study explained that this effect results from cooling of ground beneath solar arrays that absorb incoming solar energy as electricity and the panels shade the ground beneath. The cooler denser air from solar facility then moves laterally and displaces the warmer denser air over the ground on adjacent lands which convects upward (RSET 2021).

Scientific research to date indicates that any increases in air temperature resulting from operation of a utility-scale solar PV facility would not be substantial and would dissipate within short distances upward and outward from the solar facility, and may even result in ground level cooling of nearby lands. Based on the best available information, there is no evidence that any possible increase in ambient temperature from VCIP solar facilities would have a significant impact on human health or the environment.

Mitigation Measures: No mitigation is required.

¹ As discussed in Sections 4.2 (Agriculture and Forestry Resources), 4.7 (Geology and Soils), and 4.10 (Hydrology and Water Quality), over 90 percent of a typical VCIP solar array project site would remain permeable. Vegetative cover would be maintained under the solar arrays. Therefore, the character of potential VCIP projects would be significantly different from permanent conversion to urban development.

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Impact HAZ-11. Hazards to Aviation due to Physical Features and Reflective Surfaces

Tall physical features could pose a hazard to aircraft operation due to physical obstruction. No proposed VCIP structures would be tall enough to present a physical obstruction to aviation. The glare from reflective surfaces can be a hazard to aviation, but solar PV modules are dark in color and have low reflectivity and have not been shown to pose a hazard to aviation. (*Less-than-Significant Impact*)

Airports and Airstrips

Four public use airports are within, adjacent to, or near the Plan Area. These include the Robert William Johnston Municipal Airport in Mendota, the New Coalinga Municipal Airport in Coalinga, and the Harris Ranch Airport in Coalinga, and the Firebaugh Airport in Firebaugh, as described below (Fresno COG 2023). There are also six private airstrips distributed throughout the Plan Area, and another five airstrips within five miles of the Plan Area.

The Robert William Johnston Municipal Airport in Mendota is a general aviation airport located approximately 0.7 miles east of the Plan Area, 2.1 miles from the nearest potential DFA, and 1.9 miles from the connecting transmission corridor at its nearest point. The western portion of the AIA extends into Plan Area for approximately one mile. This portion of the AIA includes only the Traffic Pattern Zone and does not include any approach/departure zone, runway protection zone, or other safety zones. The affected portion of the Plan Area is within the Conical Surface where structure heights are regulated under FAA Part 77. However, this area is within the City of Mendota's Proposed Sphere of Influence and is not planned for solar or energy storage development under the VCIP.

The New Coalinga Municipal Airport is a general aviation airport located adjacent to the southwest portion of the Plan Area. The nearest potential DFAs would be located 8 to 10 miles north and northeast of the airport, and the proposed VCIP connecting transmission corridor and Substation 5 would be located 13 miles northeast, well outside the AIA.

The Harris Ranch Airport is located on the western margin of the Plan Area near the I-5/SR-198 interchange. The nearest potential DFAs would be located two miles northeast and 3.3 miles north of the airport, and the connecting transmission corridor and Substation 5 would be located eight miles northeast, well outside the AIA.

The Firebaugh Airport is a general aviation airport approximately three miles east of the Plan Area at its nearest point. The AIA for Firebaugh Airport extends as far west as the Delta-Mendota Canal approximately 1.6 miles east of the Plan Area.

Physical Obstructions

Under Title 14 of the Code of Federal Regulations, any structures taller than 200 feet above ground level (including structures outside of AIAs) are considered a potential collision hazard (CFR, Title 14, Aeronautics and Space, § 77.17 Obstruction Hazards). The height of the tallest structures associated with the proposed VCIP facilities would be as follows: gen-tie poles, 100 to 150 feet; substation elements, up to 140 feet; O&M

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buildings, up to 30 feet; anemometers, up to 30 feet; inverters, up to 12 feet; water storage tanks, up to 15 feet; and the solar arrays, which may reach as high as 12 feet at their maximum inclination. The energy storage facilities would consist of enclosed containers with a maximum height of ten feet. Major VCIP infrastructure, such as connecting transmission towers, may be as high as 180 feet. Since all VCIP facilities and infrastructure would be less than 200 feet tall, they would be considered minimum collision hazards.

The aircraft arriving or departing from the nearby airports and airstrips would traverse the Plan Area *en route* to their destinations; however, the VCIP clean energy facilities and infrastructure would not include structural elements of sufficient height to be considered a collision hazard. Nevertheless, all VCIP projects in the vicinity of public use airports would be required to comply with FAA notification requirements with respect to compatibility of their vertical structures with airport operations. In cases where VCIP facilities and infrastructure may be sited in proximity to private airstrips, the facilities would include required safety features (e.g., striping on gen-tie and transmission towers; marker balls on gen-tie and transmission conductors, as required by the FAA) to increase their visibility to pilots (FAA 2020). Therefore, the VCIP clean energy facilities and infrastructure would not present a hazard to the public or general aviation.

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 from potential VCIP project sites would be solar panels, but other sources could include vehicle windshields and reflective building materials, as well as direct illumination.

All solar panels planned for VCIP projects would be composed of PV cells. Solar PV employs glass panels designed to maximize absorption and minimize reflection 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 a textured surface that can reduce reflectivity to less than four percent of incoming sunlight (EE Times 2012). When viewed from the air, solar arrays have a consistent dark gray color with little or no reflected light. In comparison, the reflectivity of standard glass is over 20 percent.

In contrast to the solar panels planned for VCIP projects, concentrating solar thermal systems employ arrays of highly polished mirrors to refocus the radiation on a receiver tube or tower and reflect about 90 percent of the incoming sunlight (FAA 2018).

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 solar facility. 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 fleeting. 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. The potential for glare from VCIP clean energy facilities to result in a hazard to aviation would be *less than significant*.

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Safety Hazard to People Working or Residing in the Area

A typical 250 MW solar facility on a 1,600-acre site would have a permanent staff of about five employees, plus five staff for an on-site battery storage system, with an additional ten workers who would occasionally be on site for panel cleaning, maintenance and repair activities. Thus, up to approximately 20 staff could be on site at any given time for facility operations, maintenance, and security. Since 3.3 of these solar facilities could fit within a square mile, the maximum employment density would be about 66 employees per square mile. The Fresno County ALUCP sets a land use intensity limit of 300 persons per acre for new non-residential uses in the Traffic Pattern Zone (TPZ). The land use intensity of VCIP clean energy facilities would be well below that occupancy limit. No portion of the Plan Area is within the AIA of any other public use airport in Fresno or Kings County. Therefore, the VCIP clean energy facilities would not result in a significant safety hazard to people working or residing in the area due to the proximity of public use airports. As such, the potential for the project to be associated with aviation hazards is *less than significant*.

Aviation Hazards Associated with Naval Air Station Lemoore (NASL)

The military airfield at NASL in Kings County is located adjacent to the southeastern boundary of the Plan Area. The nearby portions of the Plan Area are included in the Military Influence Area (MIA) of NASL and are within the study area of the NASL Joint Land Use Study (JLUS). The JLUS has no jurisdictional effect on the VCIP but includes relevant information regarding potential safety hazards. The nearest potential VCIP DFAs are located 0.7 to 2.0 miles west and southwest of the NASL airfield. The height restrictions zones for flight operations at the airfield extend west about eight miles from the airfield to SR-269. Most of the potential DFA locations east of SR-269 are within the height restrictions zones (JLUSPC 2011). The restrictions on land use within this zone are discussed below.

A small portion of the Plan Area is within the mapped accident potential zone for NASL. The NASL flight approach/departure zones also extend into the nearby portions of the Plan Area in Fresno County. The height restriction zones extend farther out from the base and are regulated by the FAA. The Plan Area lands within the height restriction zones have height limits ranging from 150 feet nearest NASL, with height limits increasing to 500 feet at a point approximately three miles west of the airfield, and this 500-foot height limit extends a further five miles to just beyond SR-269 (JLUSPC 2011). The tallest structures within the affected portion of the Plan Area would consist of structural elements associated with the electrical substations that would be as high as 140 feet, which would fall within the height restrictions applicable to the nearest potential DFAs. However, any gen-tie poles that might be installed in this area would be subject to height restrictions as low as 150 feet at locations nearest to NASL, with height limits increasing to 500 feet at a point approximately three miles west of the airfield. A 10-mile segment of the VCIP connecting transmission corridor, which could include towers as tall as 180 feet, runs along the east side of SR-269, within the 500-foot height limit area for NASL. The nearest VCIP substation (No. 5) is located approximately 0.5 mile west of (outside) the outer height restriction area. Thus, all structural elements would readily comply with the height limits for physical obstructions within the applicable NASL height restriction zones. Nevertheless, all VCIP projects in the vicinity of NASL would be required to comply with FAA notification requirements with respect to compatibility of the vertical structures planned within those projects with airport operations. With respect to land use intensity, the JLUS states that renewable energy projects and related structures are normally compatible without restrictions (JLUSPC 2011, p. 4-31).

Given the proximity of the Plan Area to NASL, there is potential concern with the effect of glare from solar panels on flight operations originating from the base. All solar panels installed at the VCIP facilities would be composed {AM0013.1}

of PV cells. As discussed above, solar PV employs glass panels that are designed to maximize absorption and minimize reflection to increase electricity production efficiency.

The 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 is with highly reflective mirrors used in concentrating solar thermal facilities. Concentrating solar thermal systems employ arrays of highly polished mirrors to refocus the radiation on a receiver tube or tower and reflect about 90 percent of the incoming sunlight (FAA 2018). 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” (JLUSPC 2011).

It is noted that a glint and glare study using the Sandia Laboratory’s Solar Glare Analysis Tool (SGHAT) was prepared for a large solar project planned adjacent to NASL within the approach zone for the airfield on the base. The study was prepared for the CEQA document on the Mustang Two Solar project in Kings County in 2016. In the analysis, impacts from solar glare were given three ranks in order of severity: 1) potential for permanent eye damage; 2) potential for temporary after-image (a lingering image of the glare in the field of view); and 3) low potential for temporary after-image. Results from the analysis indicated that pilots flying over and near the solar facility would experience a low potential for a temporary after-image, and the potential would be limited to early morning from approximately April through September. The low potential for temporary after-image, the least severe level of solar glare, is generally considered to be safe for pilots (Kings County 2017). The results of this glint and glare analysis are considered applicable to VCIP solar projects that may be constructed near the NASL approach and departure zones because the Mustang II project site is directly beneath the flight approach path and thus represents the worst-case for glint and glare effects on flight operations. Therefore, the PV solar panels proposed within portions of the Plan Area in the NASL approach and departure zones would not result in light or glare that would pose a hazard to flight operations.

The proposed VCIP solar facilities would not result in a significant safety hazard to aviation by creating physical obstructions or excessive reflective glare. Therefore, any potential aviation-related safety hazard posed by proposed VCIP clean energy facilities to people working or residing in the area would be *less than significant*.

Mitigation Measures. No mitigation is required.

Impact HAZ-12. Impair or Interfere with Emergency Response or Evacuation Plan

Implementation of the VCIP Energy Resource and Infrastructure Plans would not impair implementation of or physically interfere with an adopted emergency response plan or an emergency evacuation plan. (*Less-than-Significant Impact*)

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 Plan Area and vicinity, there are numerous routes in and out of the area for effective emergency response and evacuation. These include State Routes 33, 145, 180, 198, 269, and I-5. Among the many County roads serving the area, the principal routes would be W. Nees, W. Bullard, W. Shields, N. Fairview, N. Russell, Belmont, W. Panoche, W. Manning, W.

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Kamm, W. Mount Whitney, W. Oakland Avenues, W. Jayne Avenue, and others. The State Routes and County roads connect with I-5 at eight interchanges within and near the Plan Area. All these County roads and State Routes are in good condition and have low ambient traffic volumes, and thus would have surplus traffic carrying capacity if they are needed as access routes for emergency vehicles. The availability of multiple escape routes from any location in the Plan Area minimizes the potential for residences or workers to become trapped and unable to evacuate from the scene of a disaster. Implementation of the proposed VCIP would not result in changes to the state and county roadway network.

During construction and decommissioning, the VCIP projects would temporarily generate traffic from commuting construction workers and delivery trucks. However, as discussed in Section 4.16. *Transportation*, this temporary increase in traffic volumes would be largely confined to the AM and PM peak traffic periods and would not affect carrying capacity on the subject roadways during most times of the day. During construction, slow moving vehicles or trucks delivering large pieces of equipment or components could result in temporary traffic slow-downs that could interfere with emergency response or evacuation procedures on the nearby County Roads. Such conditions would be infrequent and would be managed pursuant to traffic controls specified in Mitigation Measure TRA-1, which would control incoming and outgoing project traffic and avoid traffic conflicts and congestion (see Section 4.16. *Transportation*).

During operation of the VCIP solar and energy storage facilities, the small operational workforce at each of the widely dispersed facilities would not create or increase traffic congestion during times of emergency or disaster.

Construction of the gen-tie and transmission lines would involve small crews with limited equipment and materials that would be spread over a large area. Most construction activity would occur off-road, except for brief periods when trucks delivering equipment, tower components and conductor spools enter and exit public roads. Construction of transmission line crossings over roadways would be performed without interfering with traffic flow. The potential for creating traffic conflicts or congestion during times of emergency is not substantial.

Operation of the gen-tie and transmission lines would involve occasional site visits for inspections, maintenance and repairs, which would have a negligible effect on traffic congestion during times of emergency or disaster. The collection substations would be unmanned and would be operated remotely.

As discussed in Section 4.9.2. *Regulatory Context*, in a large-scale emergency, the Fresno County Multi-Jurisdictional Hazard Mitigation Plan would be activated by the Fresno County OES, which would take the lead in coordinating multiple jurisdictions in implementing the plan. The plan provides support services and coordination activities to response agencies that assess, mitigate, and respond to threats to the public and the environment in the event of hazardous material releases, including the recovery and removal of the hazardous materials. While the plan outlines a general structure for emergency responders in the event of an emergency in the County, it does not establish any specific evacuation routes or plans, standards, goals, or policies.

Implementation of the VCIP Energy Resource and Infrastructure Plans would not impair implementation of or physically interfere with an adopted emergency response plan or an emergency evacuation plan, and therefore the impact in this regard would be *less than significant*.

Mitigation Measures: No mitigation is required.

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4.9.3.2. TRANSMISSION CORRIDORS OUTSIDE THE VCIP

The transmission corridors for delivery of solar generation from VCIP projects to urban electricity markets in northern and southern California have been identified at a conceptual level in this PEIR to allow a very general discussion of environmental impacts associated with transmission line development in these corridors for informational purposes. These transmission delivery corridors extend far beyond the District's boundaries and are not part of the proposed VCIP. Planning and approval of these outside transmission lines are under the jurisdiction of state and federal energy regulatory agencies (e.g., CPUC, WAPA), and public utilities (e.g., PG&E, SCE), and counties and cities traversed by the transmission corridors. The following discussion provides an overview of potential impacts of the outside transmission lines with respect to hazards and hazardous materials and is presented for informational purposes only.

Project and Site Related Hazards and Contaminant Sources

Construction of the outside transmission lines would involve the use of hazardous materials such as fuels, lubricating oils, hydraulic fluids, glycol-based coolants, lead-acid batteries, solvents, paints, cleaning agents, coatings, and herbicides. Existing contamination from former agricultural or other land uses could pose a risk to workers and the environment during construction and operation. There are also potential health and safety hazards associated with old oil and gas wells located in the southern San Joaquin Valley, and safety hazards associated with work in proximity to natural gas transmission pipelines that are present throughout the transmission routes. In the valley and desert areas, there is a potential for health risk due to exposure to Valley Fever fungus. As discussed under Impacts HAZ-1 through HAZ-8, the potential impacts due to hazards and hazardous materials would be addressed through compliance with all applicable federal, state, and local laws and regulations that require safe transport, handling, storage, use, disposal and spill response for hazardous materials used during project construction and operation. Existing site contamination would be addressed through compliance with local policies and protocols that require site characterization of development sites to identify the nature and extent of any on-site contamination from previous lands uses, and which require cleanup and site remediation prior to development if needed.

Compliance with existing regulatory requirements would avoid or substantially reduce any potential impact due to hazards and hazardous materials associated with the outside transmission lines, and this impact would be *less than significant*.

Electromagnetic Fields (EMFs)

The outside transmission lines all would consist of 500-kV lines. As discussed under Impact HAZ-9, above, the EMFs from a 500-kV line would decrease to background or ambient levels at about 350 feet from the edge of the right-of-way. Since the new transmission lines are assumed to run parallel to existing transmission lines in all corridors, the increase in EMF levels would occur on one side of the existing transmission lines. In segments with one new transmission line, the distance between the existing transmission right-of-way and the point where EMFs drop to ambient next to the new transmission line would be 600 feet. For segments with two new parallel transmission lines, this distance would be 850 feet from the existing transmission right-of-way.

A review of the conceptual transmission corridors shows that in the northern transmission corridor extending to the Tracy and Tesla Substations, there are no existing dwellings within the above setback distances where EMFs would increase above background levels. Along the western transmission corridor there are several dwellings {AM0013.1}

south of Hollister and northeast of Salinas located within the setback zones. In Prunedale, the corridor passes through or near residential areas with a total of over 100 dwellings within the applicable setback distances. In subsequent detailed route planning, these transmission segments may need to be realigned away from the existing transmission line to a new alignment with few or no dwellings subject to potential increases in EMF levels, or the transmission projects could include alternative design measures as may be identified in engineering design studies.

Along the southern transmission corridor, there are several instances where existing sensitive receptors would occur within the indicated setback distances. These include approximately 30 dwellings and the elementary school in Kettleman City; approximately 40 rural dwellings in western Kern County; and about 20 rural dwellings in the northern foothills of the San Gabriel Mountains northwest of the Vincent Substation, and several rural properties in Monterey County. No dwellings would be located within setback distances in the Tehachapi Mountains or Antelope Valley. In subsequent detailed route planning, these transmission segments may need to be realigned away from the existing transmission line to a new alignment with few or no dwellings subject to potential increases in EMF levels, or the transmission projects could include alternative design measures as may be identified in engineering design studies.

With the incorporation of planning or engineering measures to ensure that EMF levels near existing residences and other sensitive receptors remain at or near ambient levels, the impact from potential EMF exposure related to the outside transmission lines would be *less than significant*.

Hazards to Aviation

The transmission towers in the outside transmission corridors could include physical flight obstructions if the towers are near public use airports. A review of the transmission routes shows that the northern corridor to the Tesla and Tracy Substations passes through the AIA of the Tracy Municipal Airport, but the corridor is outside the compatibility zones of the airport and therefore would not be subject to height restrictions (San Joaquin County ALUC 2018). Along the western transmission corridor to Moss Landing there are no municipal airports or other general aviation airports or airstrips within several miles of the corridor. Along the southern transmission corridor there are no municipal airports or other public use airports within several miles of the corridor, and the corridor passes through no military influence areas in the Antelope Valley. In summary, the outside transmission corridors would not be subject to physical height restrictions associated with public use airports in the regions they pass through, and the potential hazard to aviation would be *less than significant*.

Interfere with or Impair Emergency Response or Evacuation Plans

The outside transmission lines would traverse valley and mountain areas that are sparsely settled, although the lines would pass over State Routes and County roads that would be used for evacuation and emergency response. During construction, all activity would occur off-road except for occasional widely dispersed deliveries of equipment and components that would not impede vehicular movement on emergency travel routes. Construction of transmission line crossings over roadways would be performed without interfering with traffic flow. Operation of the transmission lines would involve occasional site visits for inspections, maintenance and repairs that would not have a substantial effect on traffic congestion during times of emergency or disaster. Therefore, construction and operation of the outside transmission lines would not impair implementation of or physically interfere with or impair emergency response or evacuation plans, and the impact would be *less than significant*.

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4.9.3.3. CUMULATIVE IMPACTS

Project-Related Contaminant Sources

As discussed under Impact HAZ-1 above, construction, operation, and decommissioning of the VCIP projects would involve the use of hazardous materials such as fuels, lubricants, solvents, and welding supplies, among other substances. The transport, use, and disposal of these materials are governed by federal and state laws and regulations aimed at preventing release of contaminants specifically through safe handling and disposal protocols and emergency procedures to be followed in case of spills or accidental discharges. The transport of large quantities of hazardous materials is strictly regulated by the CHP. Any 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, SWPPPs would prescribe protective measures to prevent spills and respond to uncontrolled discharges of hazardous materials. During facility operation, HMBPs would provide for safe handling, storage, disposal, and spill response. Compliance with applicable laws and regulations would ensure that impacts associated with the use of hazardous materials would be less than significant for VCIP development. These same requirements would be applicable to the other cumulative projects, including cumulative projects associated with the outside transmission corridors, such that the potential impacts would be less than significant for each cumulative project. The residual hazardous materials impact from each project would not combine to produce a cumulatively significant effect. Therefore, the cumulative impact due to routine transport, use, and disposal of hazardous materials would be *less than significant*.

Existing Sources of Potential Hazards and Contamination

Several existing conditions within the VCIP Plan Area may pose a safety or contamination hazard during construction of the proposed VCIP clean energy and infrastructure projects. These include existing regulatory cleanup sites, hazardous materials associated with agricultural operations, residual pesticides in the soils, the presence of Valley Fever fungal spores in the soil, abandoned oil and gas wells, existing natural gas and crude oil pipelines, and electrical transmission lines. As discussed under Impacts HAZ-3 through HAZ-8 above, the potential health and safety impacts associated with these conditions would be addressed through investigations and follow-up measures in accordance with applicable laws, regulations, and policies, or in compliance with safety protocols, as applicable. The cumulative project sites, including projects associated with the outside transmission corridors, may also include some or all of these same environmental conditions, which would be similarly addressed to ensure any health and safety impacts are avoided or substantially reduced. The residual health and safety impacts at each project, including the VCIP projects, 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*.

Electromagnetic Fields

As discussed under Impact HAZ-9, EMF levels from VCIP gen-tie and transmission lines would drop off rapidly to background or ambient levels within a few hundred feet of their transmission rights-of-way. The planned VCIP connecting transmission corridor does not pass near any existing dwellings or other sensitive receptors (e.g., schools), with the nearest existing residences located at least 400 from the edge of the planned ROW where EMF levels would drop to ambient levels. Therefore, the impact of EMF exposure from potential VCIP projects to existing residences would be less than significant. Other cumulative solar and energy storage projects in western {AM0013.1}

Fresno and Kings counties include gen-tie lines for interconnection to the power grid. A review of the plans for these projects indicates that the associated gen-tie lines would be set back sufficient distances from existing residential and other receptors such that EMF levels at those residences would be at background levels. As such, there is little or no potential for cumulative projects to result in EMF levels at sensitive receptor locations that are greater than background or ambient levels. Therefore, the cumulative impact in terms of EMF exposure to existing sensitive receptors from cumulative transmission and gen-tie projects, including potential VCIP projects, would be *less than significant*.

Regarding the outside transmission corridors, it is expected that those transmission lines would be routed and designed to maintain EMFs to levels at or near background levels at existing residences and other sensitive receptors in their proximity. It is not anticipated that other EMF emitting projects would be planned in the vicinity of the outside transmission lines, where any residences and other sensitive receptors in the area would be subject to increased levels of EMFs due to the combined emissions from two cumulative sources.

Within the VCIP solar and energy storage projects, some solar arrays and supporting electrical components would be installed in proximity to existing transmission lines; however, the overall duration of worker exposure would be brief, and would be well within recommended occupational exposure levels. There may be instances where gen-tie or transmission lines planned for the cumulative projects may cross or run parallel to existing transmission lines. Although the EMF levels would be compounded at such crossing locations, and workers may be briefly exposed to such cumulative EMFs, the time of exposure would be relatively brief and overall levels would still be well below recommended occupational exposure levels. Therefore, cumulative impacts associated with EMF emissions to worker from cumulative transmission and gen-tie projects, including potential VCIP projects, would be *less than significant*.

Hazards to Aviation

As discussed under Impact HAZ-11, the potential VCIP clean energy and infrastructure projects would not include structures tall enough to pose physical obstructions to flight operations at NASL or to general aviation airports in the area. Similarly, the low-reflectivity solar modules and other facilities that may be installed in the Plan Area would not result in glare impacts that would disrupt flight operations. Therefore, the safety hazard posed by potential VCIP development to aviation would be less than significant. Most of the other cumulative projects consist of solar PV generating facilities with very similar physical characteristics to potential VCIP solar development, and thus would not disrupt flight operations. The non-energy cumulative projects such as commercial, residential, and agricultural processing facilities likewise would not include tall structures or glare-producing elements that would disrupt flight operations. The outside transmission lines would not have an adverse effect on aviation and thus would not make a considerable contribution to any cumulative impact on aviation.

Hazards related to aviation at each cumulative project, including the potential VCIP projects, would be less than significant. The less-than-significant hazards related to aviation posed by each cumulative project would not combine to produce a cumulatively significant aviation hazard. Therefore, the cumulative impact of hazards related to aviation would be *less than significant*.

Summary

The potential impacts related to hazards and hazardous materials associated with implementation of the VCIP Energy Resource and Infrastructure Plans would be less than significant without mitigation or would be avoided {AM0013.1}

or substantially reduced through Implementation of mitigation measures identified in this PEIR, or through compliance with all applicable laws and regulations. Potential impacts related to any potential hazards and hazardous materials associated with other cumulative projects would be less than significant or would be similarly avoided or substantially reduced such that the cumulative impact would be *less than significant*. The potential VCIP clean energy and infrastructure projects would *not make a considerable contribution to a cumulative impact*, and as such the cumulative impact associated with VCIP implementation would be *less than significant*.

4.9.4. References – Hazards and Hazardous Materials

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4.10. HYDROLOGY AND WATER QUALITY

This section includes the following discussion and analysis related to hydrology and water quality: existing environmental and regulatory setting; criteria and methodology for evaluating impacts; and results of the impact assessment, including identification of potentially significant impacts and corresponding mitigation measures to avoid or substantially lessen such impacts to the extent feasible, as appropriate. The District received no scoping comments pertaining to hydrology and water quality (see PEIR Scoping Report in Appendix A of this document). Scoping comments related to water supply are addressed in Section 4.17. *Utilities and Service Systems*.

4.10.1. Environmental Setting

Climate and Rainfall

In the Plan Area, summers are hot and dry with average high temperatures in the high 90s and nighttime lows in the low 60s. The winters tend to be foggy and cool, with average highs in the high 50s and average lows in the mid-30s to mid-40s depending on location. Rainfall occurs primarily in the winter months between October and May, and average annual rainfall ranges from 6 to 8 inches depending on location within the Plan area (Fresno Co. 2023b).

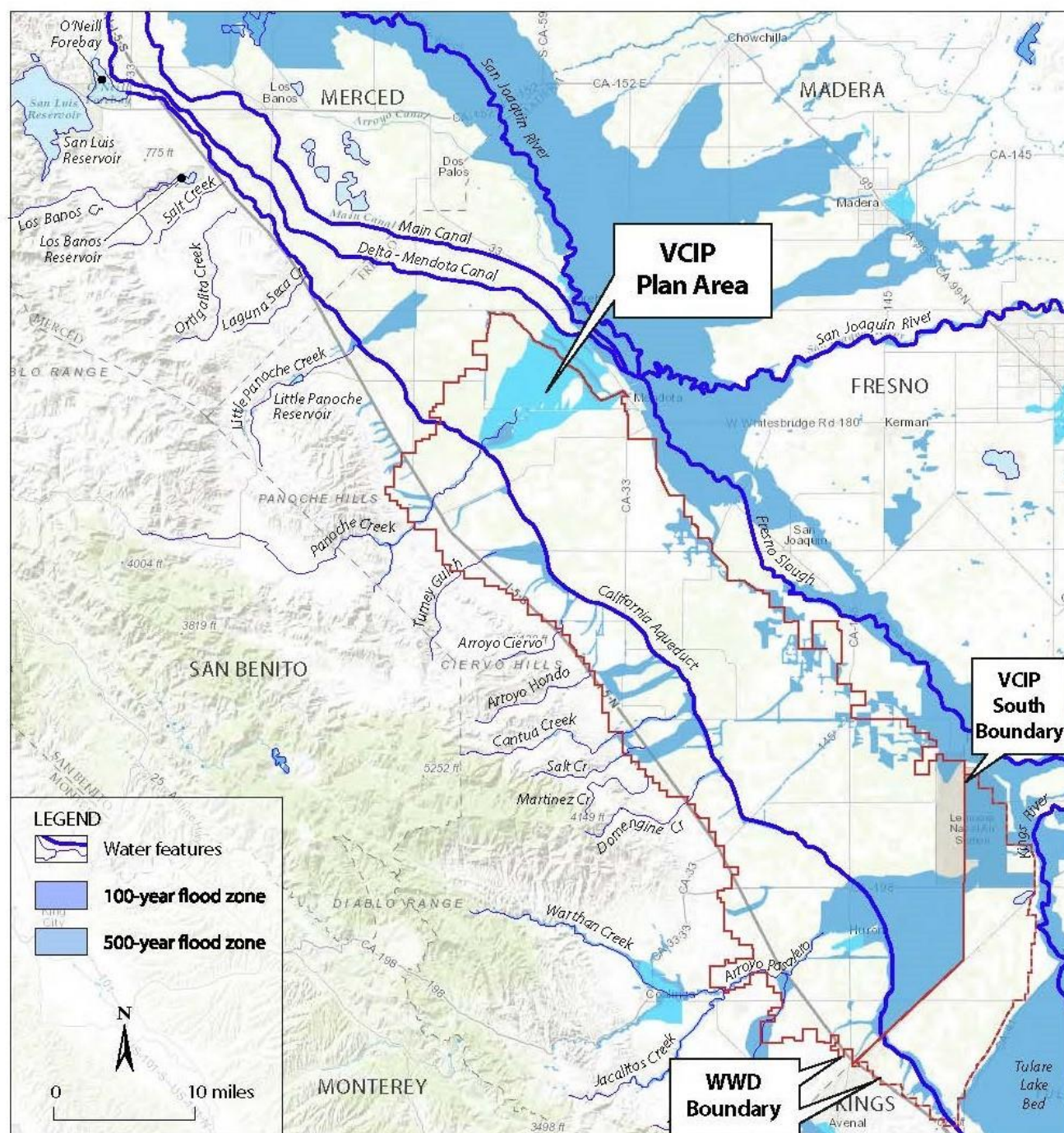
Regional and Local Drainage

The Plan Area is on the west side of the San Joaquin Valley, which receives drainage flows from the Diablo Range from the west (see Figure 4.10-1). The east slope of the Diablo Range is drained by a series of streams that flow eastward into the alluvial fans of the valley floor. All these streams are ephemeral, and most are small and unnamed. Some have large drainage areas, so major storm events can result in high stream flows and downstream flooding on the valley floor. In the Plan Area, the major streams are Little Panoche Creek and the Arroyo Pasajero Stream System. These creeks and other local drainage courses are shown in Figure 4.10-1 and described below.

Little Panoche Creek

Located outside the Plan Area to the northwest, Little Panoche Creek drains the Little Panoche Valley and surrounding hills. Normal flows in the creek emerge from the foothills and pass under I-5 and the California Aqueduct and follow the natural channel east for a further 1.5 miles where the channel ends. The creek is managed for flood control purposes by the California Department of Water Resources (DWR). Little Panoche Reservoir, located approximately 3 miles west of I-5, was constructed by the U.S. Bureau of Reclamation (USBR) to provide flood protection for the San Luis Canal/California Aqueduct. The detention dam is maintained by USBR, which ensures dam safety through regular inspections and corrective actions as needed to meet federal dam safety standards. The reservoir was designed for a 100-year storm and has a storage capacity of 820 acre-feet (AF). When storage levels exceed capacity, the uncontrolled spillway releases water which flows downstream under I-5 to the California Aqueduct where it enters a retention basin.

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Source: FEMA, 2015

Surface Hydrology
Figure 4.10-1

Panoche Creek

Panoche Creek flows eastward from the Panoche Valley and passes under I-5 north of Panoche Road. At the California Aqueduct, the Aqueduct is siphoned under the creek bed in two large pipes. On the east side of the Aqueduct, the natural channel continues northeastward for 5 miles and terminates at Belmont Avenue, one mile east of Jerrold Avenue, within the Plan Area.

Tumey Gulch and Arroyo Ciervo

These two streams flow easterly from the Ciervo Hills into the valley and enter the western portion of the Plan Area. The eastward flow from these streams is obstructed by the California Aqueduct. During periods of high flow, flood water forms ponds on the west side of the Aqueduct that may spill stormwater and sediment into the Aqueduct during storm events.

Cantua Creek System

The Cantua Creek System includes Arroyo Hondo, Cantua Creek, Salt Creek, Martinez Creek, and Domengine Creek. These creeks drain the east side of Joaquin Ridge, and pass under I-5 between Kamm Avenue and Fresno-Coalinga Road in the western portion of the Plan Area. Stormwater from the Cantua Creek system may form ponds on the west side of the California Aqueduct during times of high flow.

Arroyo Pasajero Stream System

The Arroyo Pasajero Stream System (also known as the Los Gatos Creek System) encompasses the largest drainage area in the western San Joaquin Valley. The major creeks in the system include Los Gatos, Warthan, Jacalitos, and Zapato-Chino creeks. The system drains the City of Coalinga and Pleasant Valley and then passes under I-5 between El Dorado and Jayne Avenues. Flows from Arroyo Pasajero are collected in a large detention basin on the west side of the California Aqueduct, north of the City of Huron.

Apart from the above creek systems, there are no other natural drainage features within the Plan Area. Throughout the District, an engineered system of irrigation canals and ditches historically conveyed and distributed irrigation water. Most of these are no longer used, as the CVP installed a buried distribution system to deliver surface water, and farmlands have either been retired from irrigated agriculture or the transition to drip irrigation systems and other improvements have rendered many canals and ditches obsolete.

Given the level terrain of the Plan Area, the small amount of annual rainfall tends to evaporate or pond in place and percolate into the soil, and surface runoff of stormwater is negligible. Any substantial runoff naturally flows with the topographic gradient and is captured by the system of intervening canals and ditches. There are no drainage outlets from any portion of the Plan Area.

Drainage East of the Plan Area

On the east side of the San Joaquin Valley, drainage flows from the Sierra Nevada are conveyed by an extensive network of rivers and streams into the Valley. The streams and rivers in the northern portion of the Valley converge on the San Joaquin River which flows to the Delta and ultimately the Pacific Ocean, while major rivers of the southern Sierra (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 Lakebed at the southern end of the San Joaquin Valley. These rivers and creeks

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formed broad deltaic fans as they emerged from the Sierra foothills and branched out as they emerged onto the Valley floor to form distributary systems that spread out over the alluvial fans. Since the Tulare Basin is the topographical low point in the Plan Area 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 reached elevations where it began to flow north into Fresno Slough and to the San Joaquin River. Construction of canals and diversion structures to redirect surface water for irrigation of agricultural lands began in the mid-1800s. 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 floods 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, the Tulare Basin has flooded in 1969, 1983, 1997, and 2023.

Other Water Conveyance Features

The major water conveyance features within and near the Plan Area include: the San Luis Canal/California Aqueduct which runs along the west side of the valley floor roughly parallel to Interstate-5; and the Delta-Mendota Canal which passes within 1.5 miles of the Plan Area on the north. Several other parallel canals convey water from the Delta southeast to the Mendota Pool located near the northeast corner of the Plan Area. In addition, the concrete-lined channel of the former San Luis Drain, which was used to convey agricultural drainage water northward for disposal but is now dry, runs along the eastern edge of the Plan Area.

Surface Water Quality

Under the federal Clean Water Act section 303(d) (33 U.S.C., § 1313), the California State Water Resources Control Board (SWRCB) is required to identify water bodies that do not meet water quality standards. The “Impaired Water Bodies” in the vicinity of the Plan Area are listed below, along with the pollutants listed for each (SWRCB 2024).

- Panoche Creek (18-mile segment from Silver Creek in Diablo Range to Belmont Avenue) – mercury, sedimentation/siltation, selenium, toxicity.
- San Joaquin River (Mendota Pool to Bear Creek) – pesticides, toxicity, pH, DDT.
- Mendota Pool – mercury, selenium.
- Kings River, Lower (Island Weir to Stinson and Empire Weirs) – electrical conductivity, toxaphane, boron, molybdenum, toxicity, pyrethroids, bifenthrin, dissolved oxygen, pH.

The only impaired water body within the Plan Area is the 2-mile segment of Panoche Creek that extends into the northwestern portion of the Plan Area. All other impaired water bodies listed above are outside the Plan Area.

Flooding Potential

According to the Flood Insurance Rate Maps (FIRM) covering Fresno County, the majority of the Plan Area is designated Zone X (Area of Minimal Flood Hazard). Several areas within the Plan Area are within the mapped 100-year flood zone. As shown in Figure 4.10-1, flood flows during the 100-year (1% Annual Chance Flood {00081405.1})

Hazard) event would include lands adjacent to the westside drainage systems described above, a large area located generally south of SR-198 and east of the Arroyo Pasajero Westside Detention Basin, and scattered lands throughout the low-lying eastern portions of the Plan Area. During the 500-year (0.2%) event, additional floodwater generated by Panoche Creek would result in broad overland sheet flows that would extend over an approximately 35 square-mile area in the northern portion of the Plan Area (FEMA 2009).

Inundation Potential Due to Dam Failure

Some portions of Fresno County would be subject to potential inundation if dams located in the Sierra Nevada and the Diablo Range were to fail. Failure of Pine Flat Dam on the Kings River or Friant Dam on the San Joaquin River would result in potential westward inundation across large areas of central Fresno County, eventually turning northward to lower elevations along Fresno Slough and the San Joaquin River. The western edges of these inundation areas extend into the northeast margin of the Plan Area between Mendota and San Joaquin. The inundation zones for the Terminus Dam on the Kaweah River would extend as far west as Highway 41 in Kings County and would not encroach upon the Plan Area (Fresno County 2023b; Kings County 2010e).

In the Diablo Range, failure of the dam at Little Panoche Reservoir would similarly inundate a broad area extending east toward the San Joaquin River and then head north along the trough of the valley. The mapped inundation zone would extend to within 4 miles of the northwest boundary of the Plan Area but would not encroach upon it.

Most of the Plan Area is outside the mapped inundation areas for all reservoirs in the region, except a relatively small area south of Mendota where lands on the northeastern margin of the Plan Area may be subject to risk of flooding in the unlikely event of dam failure at Friant Dam or Pine Flat Dam.

Groundwater

The San Joaquin Valley is underlain by deep water-bearing alluvial deposits. For planning purposes, DWR divides the valley into groundwater basins and subbasins. The Plan Area is located entirely within the Westside Subbasin of the San Joaquin Groundwater Basin. The boundaries of the Westside Subbasin correspond closely with the boundaries of the District.

The Westside Subbasin consists of two main water-bearing zones, an upper and a lower zone, separated by the impervious Corcoran Clay formation. Corcoran Clay divides the groundwater system into two major aquifers – a confined aquifer below (Lower Aquifer) and a semi-confined aquifer above (Upper Aquifer). Within the Plan Area, the Corcoran Clay layer ranges in thickness from approximately 20 to 100 feet, and occurs at depths ranging from approximately 400 to 800 feet (DWR 2020, Figures 2-30 and 2-31).

Groundwater quality in the Westside Subbasin 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) exceed 2,000 parts per million, which is considered the upper limit of salinity for irrigation of most crops. Within the Plan Area, the base of fresh water ranges from approximately 400 to 2,400 feet below the ground surface (DWR 2020, Fig. 2-32).

In January 2020, the District's Board of Directors adopted the Groundwater Sustainability Plan (GSP) for the 622,215-acre Westside Subbasin (Subbasin), which includes the entire District service area of 614,700 acres. In {00081405.1}

June 2022, the District’s Board of Directors adopted clarifications and amendments to the GSP. Most recently, the District’s Board of Directors adopted the 2025 Amendment to the GSP in December 2024.¹ The GSP determined that the estimated sustainable yield for the historical period (1989-2015) across the Subbasin is 305,000 acre-feet per year (AFY)(DWR 2025a). Under the GSP, approximately 525,000 acres within the Subbasin are eligible to receive a groundwater allocation, which limits the volume of annual groundwater pumping. The groundwater allocation framework includes a transition period from 2022 to 2030, in which a uniform annual allocation is initially established at 1.3 acre-feet (AF) per acre and then, starting in 2024, is subsequently reduced each year by 0.1 AF per acre until 2030 when the allocation would reach 0.6 AF per acre (DWR 2025a). Groundwater will be distributed based on per-acre land ownership for all qualifying lands. For purposes of this PEIR, the long-term groundwater supply available to agricultural users is assumed to be 0.6 AF per acre per year.

4.10.2. Regulatory Context

The following is an overview of the principal statutes, regulations, plans and programs related to hydrology and water quality that may apply to the VCIP.

Federal

Clean Water Act

The Clean Water Act (CWA) (33 U.S.C., § 1251 et seq.) 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” (i.e., jurisdictional waters) 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 United States. Standards are based on the designated beneficial use(s) of the water body. Where multiple beneficial 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 the U.S. 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 SWRCB and its nine Regional Water Quality Control Boards. Within the Plan Area, 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 the Central Valley Regional Water Quality Control Board (CVRWQCB) (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 United States” and associated wetland resources. (See Section 4.4. *Biological Resources* for a full description of Section 404 and related regulatory requirements.)

¹ As discussed below, the GSP identifies the proposed VCIP as a potential agricultural land repurposing project that may be implemented, alongside other initiatives to promote groundwater sustainability in the Subbasin.
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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.

State

Porter-Cologne Water Quality Control Act

Adopted in 1969, the Porter-Cologne Water Quality Control Act (Porter-Cologne Act) (Wat. Code, § 13000 et seq.) 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 SWRCB and the nine Regional Water Quality Control Boards (RWQCBs or Regional Boards), whose primary responsibility is the development and implementation of Basin Plans (or Water Quality Control Plans). The Plan Area lies within the jurisdiction of the CVRWQCB (Region 5). The SWRCB is the primary state agency responsible for protecting the quality of the state's surface and groundwater resources, although most day-to-day implementation authority is delegated to the various RWQCBs. The Porter-Cologne Act provides for development and periodic review of Basin Plans, which designate beneficial uses and establish water quality objectives (standards) for surface waters and ground waters. Basin Plans also include programs to achieve and maintain water quality objectives and provide the technical bases for establishment of waste discharge permit conditions and enforcement actions related to wastewater treatment facilities and many other activities that may affect water quality.

Pursuant to the authority delegated under CWA Section 303, the Regional Boards issue NPDES discharge permits to manage and monitor point and nonpoint source pollution, and Waste Discharge Requirements (WDRs) to municipal wastewater treatment plants and industrial dischargers to implement Basin Plan policies through discharges to land and water. Discharges into waters of the state that are also waters of the U.S. require a Water Quality Certification (per Section 401 of the CWA) from the RWQCB as a prerequisite to obtaining certain federal permits, such as a Section 404 CWA permit. Discharges into all waters of the state, even those that are not also waters of the U.S., require WDRs, or waivers of WDRs, from the RWQCB.

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.

Central Valley Regional Water Quality Control Board

In the San Joaquin Valley, including the Plan Area, the state water quality standards are regulated by the CVRWQCB. As noted above, the CVRWQCB establishes beneficial uses and water quality objectives for surface water and groundwater resources within the region through the San Joaquin River Basin Plan. The CVRWQCB also implements the CWA Section 303(d) total maximum daily load (TMDL) process, which consists of {00081405.1}

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.

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 (Construction Stormwater General Permit or General Permit) applies to all of California. Since the projects under the VCIP would disturb more than 1 acre of land, they 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 SWRCB. 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 SWRCB 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 project implementation proceeds.

Sustainable Groundwater Management Act

In September 2014, Governor Brown signed the Sustainable Groundwater Management Act (SGMA). The goal of the legislation is to, among other things, provide for the “sustainable management” of California’s groundwater basins (i.e., the management and use of groundwater in a manner that can be maintained during SGMA’s planning and implementation horizon without causing specified “undesirable results”) and to “enhance local management of groundwater.” (Wat. Code, §§ 10720.1, 10721(v).) SGMA requires a designated groundwater sustainability agency (GSA) to prepare a GSP for each high- or medium-priority basin (or subbasin), with adoption deadlines of 2020 or 2022 depending on the basin’s priority.

As the primary water purveyor in the Subbasin, the District is the designated GSA for the Subbasin. Fresno County serves as the GSA for the portions of the Subbasin that are within the County’s jurisdictional boundaries, including the areas within the City of Huron’s jurisdictional boundaries, but outside the boundaries of the District. DWR has designated the Subbasin as a critically overdrafted basin. The District, in cooperation with the County, prepared the “Westside Subbasin Groundwater Sustainability Plan” (the GSP), which the County and the District adopted on January 7 and January 8, 2020, respectively. The District resubmitted the GSP to DWR on July 18, 2022. DWR approved the GSP on August 4, 2023. DWR included a list of recommended corrective actions to improve the GSP. Based on the list of corrective actions, the District identified a need for an amendment to the GSP, which was adopted in December 2024 and January 2025 by the District and Fresno County, respectively (2025 GSP Amendment)(DWR 2025a).

The purpose of the GSP is to characterize groundwater conditions in the Subbasin, evaluate and report on conditions of overdraft, establish sustainability goals and sustainability management criteria, and describe projects and management actions the GSA intends to implement to achieve sustainability by 2040. The plans

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and progress toward meeting the sustainability goal - that the Subbasin will be operated within its sustainable yield by 2040 and maintain sustainability through the entire planning and implementation horizon through 2070 - will be evaluated every five years.

The GSP determined that the estimated sustainable yield for the historical period (1989-2015) across the Subbasin is 305,000 AFY (DWR 2025a). The GSA has prepared a groundwater allocation framework to manage demand by equally distributing total annual pumping from the Subbasin based on overlying land acreage. The groundwater allocation framework includes a “transition period” from 2022 to 2030, with an initial uniform annual allocation of 1.3 AF per acre, which is reduced each year by 0.1 AF per acre, starting in 2024, until 2030 when the permanent annual allocation of 0.6 AF per acre will take effect. The groundwater will be distributed based on per-acre land ownership for all qualifying lands.

A GSP five-year update, also known as a periodic evaluation, is an evaluation of the implementation of an approved GSP performed by the GSA. The evaluation is described in a written assessment submitted to DWR and represents a progress report for each evaluation cycle – at least every five years after initial GSP submission. The evaluation summarizes the basin’s conditions in relation to the sustainable management criteria established in the GSP, the implementation of projects and management actions, and other information as specified in SGMA and the GSP Regulations. The purpose of the five-year updates is to determine whether GSP implementation is meeting interim milestones and is on track to meeting the sustainability goal for the basin (WWD, 2022b). The District submitted its five-year update, 2025 Periodic Evaluation, to DWR in January 2025. The Periodic Evaluation indicates that current groundwater level conditions generally reflect progress toward groundwater sustainability. (DWR 2025b.) As described in the District’s 2025 Periodic Evaluation, substantial progress towards the implementation of Project Management Actions described in the 2022 GSP was made during the first five years of GSP implementation. Over this period, the District prioritized sustainable groundwater management by (1) expanding existing Project Management Actions and (2) developing two new Project Management Actions: Agricultural Land Repurposing, and Desalination and On-Farm Recycling. Agricultural Land Repurposing includes converting agricultural lands to less water-intensive beneficial uses to reduce groundwater demand. This includes clean energy development. The Desalination and On-Farm Recycling Project focuses on developing infrastructure to treat salty Upper Aquifer excess groundwater during wet years, and using the permeate for crop irrigation and applying the resulting concentrate on salt tolerant crops to manage treatment byproduct and store it in the aquifer system. (For additional information regarding the District’s 2025 Periodic Evaluation and the GSP, see Appendix F of this PEIR.)

The 2025 GSP Amendment focuses on groundwater management actions that may be implemented by the GSA to achieve sustainability by 2040. GSP Project No. 6, “Agricultural Land Repurposing,” identifies the proposed VCIP and the District’s Strategic Plan as initiatives to promote groundwater sustainability in the Subbasin. The District’s Strategic Plan outlines key strategies to ensure the District achieves long-term groundwater sustainability, preserves economic opportunities for growers and the communities, and protects against undesirable results, such as subsidence. Regarding the proposed VCIP, the GSP provides: “The VCIP is an initiative that focuses on expanding clean and renewable energy infrastructure within California’s Central Valley. It aims to support the region’s transition to more sustainable energy sources while addressing environmental and economic challenges. . . . The VCIP seeks to align energy development with goals of sustainability and resilience, including the reduction of carbon emissions and groundwater sustainability.” Consistent with the VCIP’s project description, the GSP further provides: “The District’s objective with VCIP is to repurpose drainage-impaired and other agricultural lands for the generation of clean energy to promote

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enhanced agricultural productivity within the District.” Overall, the GSP determined that these agricultural land repurposing programs would “enhance the long-term sustainability of groundwater resources by addressing both water use reduction and regional economic transition, ensuring groundwater sustainability, and fostering environmental and community resilience” (DWR 2025a).

Westlands Water District

The District provides water services to agricultural, municipal, and industrial users. The District delivers Central Valley Project (CVP) contract water allocated by the U.S. Bureau of Reclamation. To provide timely, reliable, and affordable water services and to facilitate SGMA implementation, the District provides funding for education and advanced technology, enabling growers to effectively and efficiently use and conserve CVP contract water and groundwater. The District also monitors the quality and quantity of pumped groundwater as part of its Water Management Plan (WWD 2019a).

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 discussed above, the District serves as the GSA for the Subbasin pursuant to SGMA. It is the District’s responsibility under SGMA to: prepare a GSP which characterizes groundwater conditions in the Subbasin, evaluate and report on conditions of overdraft, establish sustainability goals and sustainability management criteria, and describe projects and management actions the GSA intends to implement to achieve sustainability by 2040.

Fresno County

Fresno County General Plan

The 2024 Fresno County General Plan (Fresno County 2024b) contains the following goals and policies related to hydrology and water quality that may be relevant to the VCIP:

Open Space and Conservation Element

A. Water Resources

GOAL OS-A	To protect and enhance the water quality and quantity in Fresno County’s streams, creeks, and groundwater basins
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- Policy OS-A.18 Groundwater Quality Protection**
The County shall protect groundwater resources from contamination and overdraft by pursuing the following efforts.
- a. Identifying and controlling sources of potential contamination;
 - b. Protecting important groundwater recharge areas;
 - c. Encouraging water conservation efforts and supporting the use of surface water for urban and agricultural uses wherever feasible;
 - d. Encouraging the use of treated wastewater for groundwater recharge and other purposes (e.g., irrigation, landscaping, commercial, and non-domestic uses);
 - e. Supporting consumptive use where it can be demonstrated that this use does not exceed safe yield and is appropriately balanced with surface water supply to the same area;
 - f. Considering areas where recharge potential is determined to be high for designation as open space; and
 - g. Developing conjunctive use of surface and groundwater.
- Policy OS-A.19 Water Discharge Pollution Mitigation**
The County shall require new development near rivers, creeks, reservoirs, or substantial aquifer recharge areas to mitigate any potential impacts of release of pollutants in storm waters, flowing river, stream, creek, or reservoir waters.
- Policy OS-A.20 Minimization of Sedimentation and Erosion**
The County shall minimize sedimentation and erosion through control of grading, cutting of trees, removal of vegetation, placement of roads and bridges, and use of off-road vehicles. The County shall discourage grading activities during the rainy season unless adequately mitigated to avoid sedimentation of creeks and damage to riparian habitat.
- Policy OS-A.21 Best Management Practices**
The County shall continue to require the use of feasible and practical best management practices (BMPs) to protect streams from the adverse effects of construction activities and urban runoff.
- Policy OS-A.23 Wastewater Treatment Standards**
The County shall only approve new wastewater treatment facilities that will not result in degradation of surface water or groundwater. The County shall require treatment to tertiary or higher levels.

Public Facilities and Services Element

C. Water Supply and Delivery

- GOAL PF-C** To ensure the availability of an adequate and safe water supply for domestic and agricultural consumption.

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Policy PF-C.3 Surface Water Use

To reduce demand on the county's groundwater resources, the County shall encourage the use of surface water to the maximum extent feasible.

Policy PF-C.10 Ongoing Water Supply

The County shall actively participate, or support the efforts of other local agencies, in the development and implementation of Sustainable Groundwater Management Plans to ensure a sustainable water supply is available to help support agriculture and accommodate future growth.

Policy PF-C.11 Adequate Sustainable Water Supply

The County shall approve new development only if an adequate sustainable water supply to serve such development is demonstrated.

Policy PF-C.12 Limited Groundwater

In those areas identified as having severe groundwater level declines or limited groundwater availability, the County shall limit development to uses that do not have high water usage or that can be served by a surface water supply.

D. Wastewater Collection, Treatment, and Disposal

GOAL PF-D To ensure adequate wastewater collection and treatment and the safe disposal of wastewater.

Policy PF-D.6 On-site Sewage Disposal Systems

The County shall permit individual on-site sewage disposal systems on parcels that have the area, soils, and other characteristics that permit installation of such disposal facilities without threatening surface or groundwater quality or posing any other health hazards and where community sewer service is not available and cannot be provided.

E. Storm Drainage and Flood Control

GOAL PF-E To provide efficient, cost-effective, and environmentally-sound storm drainage and flood control facilities that protect both life and property and to divert and retain stormwater runoff for groundwater replenishment.

Policy PF-E.5 Impacts to Flood Control Facilities

The County shall only approve land use-related projects that will not render inoperative any existing canal, encroach upon natural channels, and/or restrict natural channels in such a way as to increase potential flooding damage.

Policy PF-E.6 Drainage Facility Construction

The County shall require that drainage facilities be installed concurrently with and as a condition of development activity to ensure the protection of the new improvements as well as existing development that might exist within the watershed.

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Policy PF-E.9	100-year Flood Protection The County shall require new development to provide protection from the 100-year flood as a minimum.
Policy PF-E.11	Natural Site Drainage Patterns The County shall encourage project designs that minimize drainage concentrations and maintain, to the extent feasible, natural site drainage patterns.
Policy PF-E.16	Minimal Sedimentation and Erosion The County shall minimize sedimentation and erosion through control of grading, cutting of trees, removal of vegetation, placement of roads and bridges, and use of off-road vehicles. The County shall discourage grading activities during the rainy season, unless adequately mitigated, to avoid sedimentation of creeks and damage to riparian habitat.
Policy PF-E.20	Storm Water Drainage Discharges The County shall require new development of facilities near rivers, creeks, reservoirs, or substantial aquifer recharge areas to mitigate any potential impacts of release of pollutants in flood waters, flowing rivers, streams, creeks, or reservoir waters.
Policy PF-E.21	Best Management Practices The County shall require the use of feasible and practical best management practices (BMPs) to protect streams from the adverse effects of construction activities and shall encourage the urban storm drainage systems and agricultural activities to use BMPs.

Fresno County Ordinance Code

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 (Fresno County 2023a). Ordinance Code Title 17 – Divisions of Land, requires subdivisions to provide for control of drainage, stormwater runoff, and prevention of erosion and sedimentation (Fresno County 2023a).

Fresno County Solar Facility Guidelines

The Fresno County Solar Facility Guidelines (Fresno County 2017c) contain the following provision related to hydrology and water quality:

2. Information shall be submitted that identifies the source of water for the subject parcel (surface water from irrigation district, individual well(s), conjunctive system). If the source of water is via district delivery, the applicant shall submit information documenting the allocations received from the irrigation district and the actual disposition of the water (i.e., utilized on-site or moved to other locations) for the last 10 years. If an individual well system is used, provide production capacity of each well, water quality data and data regarding the existing water table depth.

A discussion of the consistency of VCIP projects with the Fresno County Solar Facility Guidelines is provided in Section 4.11. *Land Use and Planning*.

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Fresno County Improvement Standards

The Fresno County Improvement Standards serve as an engineering reference for Fresno 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 construction of streets, water supply systems, storm drainage, and sewage disposal, as well as requirements for geotechnical reports for the proposed improvements (Fresno County 1966).

Fresno County Local Agency Management Program (LAMP)

Pursuant to Water Code section 13291(b)(3), the Fresno County Local Agency Management Program (LAMP) was established in 2017 for the purpose of regulating the design, installation, and operation of on-site wastewater treatment systems (OWTS) within the County. The program covers septic tank and leach field systems for the treatment and disposal of wastewater where conveyance to public sanitary sewers is not available. The Fresno County Public Works and Planning Department is responsible for the review and approval of proposed septic systems to ensure compliance with all applicable standards to protect groundwater quality (Fresno County 2017b).

4.10.3. Environmental Impact Analysis

METHODOLOGY

Evaluation of potential impacts related to hydrology and water quality was based on a review of maps, plans, and published documents that may be relevant to the VCIP Plan Area, including: the General Plan and “General Plan Background Report” for Fresno County; mapping by FEMA; plans and water quality data from the SWRCB and Regional Boards; plans, reports, and data from the District; as well as the Water Supply Assessment (WSA) prepared for this PEIR (see Appendix F). The analysis also considers current policies and regulatory requirements that may apply to VCIP projects, including those identified in *Section 4.10.2. Regulatory Context*, above.

SIGNIFICANCE CRITERIA

Based on Appendix G of the CEQA Guidelines, implementation of the VCIP would be considered to result in a significant impact related to hydrology or water quality if it would:

- a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality.
- b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.

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- c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:
 - i) Result in substantial erosion or siltation on- or off-site;
 - ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;
 - iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or
 - iv) Impede or redirect flood flows.
- d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.
- e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

4.10.3.1. DIRECT AND INDIRECT EFFECTS

Valley Clean Infrastructure Plan

Impact HYD-1. Violate Water Quality Standards or Waste Discharge Permits

Implementation of the VCIP Energy Resource and Infrastructure Plans would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality. (No Impact)

VCIP Energy Resource and Infrastructure Plans

Drinking Water Standards. Drinking water standards are implemented by the SWRCB and apply to local water distribution systems for domestic water supply. No domestic water distribution systems are anticipated to be installed for potential projects under the VCIP. Since drinking water for solar/energy storage facility employees would be provided by bottled water delivered by truck, the drinking water standards would be applicable at the water bottling plant and would not apply to the VCIP. (See section 4.19. *Utilities and Services* for a detailed discussion of water supply.)

Surface Water Quality Standards. As discussed in Section 4.10.2 *Regulatory Context*, the SWRCB identifies water bodies where water quality is impaired or limited by the presence of pollutants. Within the Plan Area, a segment of Panoche Creek is listed as a water quality limited river segment that is impaired by mercury, sedimentation/siltation, and selenium (SWRCB 2024). Within the VCIP Plan Area, there are two Development Focus Area (DFA) sites adjacent to Panoche Creek. However, any solar or energy storage projects constructed on those sites would avoid encroachment upon the creek for reasons of constructability and to avoid aquatic and riparian habitats within and along the creek. The implementation of the SWPPPs for those projects would

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prevent stormwater runoff from leaving the project sites and adding to sediment or contaminant loads in the creek. Similarly, water from the creek would not be used or affected by the VCIP projects. As such, there is no potential for the VCIP projects to exacerbate or be adversely affected by the pollutant loads in Panoche Creek. Therefore, implementation of the VCIP would not violate any water quality standards or WDRs, or otherwise substantially degrade surface water quality. (See Impacts HYD-3 and HYD-4 for discussions of water quality impacts during construction and project operation.)

Stormwater Standards. The CVRWQCB has not established numeric standards for surface water runoff quality; therefore, no surface water quality standards apply to the project. (See Impacts HYD-3 and HYD-4 for discussions of water quality impacts during construction and project operation.)

Wastewater Treatment Standards. Under Impact HYD-1, the only potential for groundwater quality impact is from wastewater disposal, which is entirely addressed through adequate septic system design pursuant to WDRs. WDRs refer to standards applied to local wastewater treatment facilities by the Regional Board to limit quantities and qualities of wastewater discharge. Most, if not all, VCIP solar facilities and energy storage facilities would utilize on-site septic tanks and leach fields for disposal of wastewater associated with their Operations and Maintenance (O&M) buildings. The substations, transmission lines and gen-tie lines would be unstaffed and would not generate wastewater. It is expected that the average staff level for a typical 250-megawatt (MW) solar/BESS facility would have 10 operational staff on-site per day, along with a daily average of five occasional maintenance workers, for a daily average of 15 workers in total. Based on a peak wastewater generation rate of 50 gallons per day (gpd) per person, the average peak daily volume of wastewater generated would be approximately 750 gallons. Staffing for stand-alone energy storage facilities would be up to five personnel for the largest facilities, resulting in daily wastewater generation of about 250 gallons. These volumes are well below the 2,500 gpd threshold where WDRs would be required for a small community system from the Regional Board. To ensure that the project soils would be capable of supporting disposal of the wastewater effluent generated by the O&M facilities, the planned septic systems would be designed consistent with the Fresno County Plumbing Code, the Fresno County Improvement Standards, and the design criteria of the Fresno County LAMP, as approved by the SWRCB (Fresno County 2017b). Adherence to these requirements would ensure that soils in the planned leach field areas would be capable of adequately accommodating the wastewater effluent generated by the VCIP facilities. In cases where the soils have insufficient percolation characteristics, engineered systems would be employed. The septic systems would be subject to the approval of the Fresno County Public Works and Planning Department, which would ensure compliance with all applicable standards to avoid impacts to groundwater quality. During construction, sanitary needs would be provided by portable chemical toilets which would be serviced by an outside contractor as needed. Therefore, the solar and energy storage projects under VCIP would meet applicable wastewater treatment standards and there would be *no impact* in terms of groundwater quality.

Implementation of the VCIP Energy Resource and Infrastructure Plans would not violate any water quality standards or waste discharge requirements, or otherwise substantially degrade surface or groundwater quality (*no impact*).

Mitigation Measures: No mitigation is required.

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Impact HYD-2. Effects on Groundwater Use and Sustainability

Implementation of the VCIP Energy Resource and Infrastructure Plans would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge or impede sustainable groundwater management of the basin. (*Less-than-Significant Impact*)

The VCIP Would Be Implemented Pursuant to the GSP and Promote Sustainable Groundwater Management of the Subbasin

As provided in *Section 4.10.2* (Sustainable Groundwater Management Act), the GSP identifies the proposed VCIP as a potential agricultural land repurposing project intended to promote sustainable groundwater management of the Subbasin. The GSP provides that implementing the VCIP and the District's Strategic Plan would "enhance the long-term sustainability of groundwater resources by addressing both water use reduction and regional economic transition, ensuring groundwater sustainability, and fostering environmental and community resilience." These complementary management actions are "intended to promote reduced groundwater demand while supporting the local economy through clean energy development" (DWR 2025a). Additionally, as described above and in Appendix F of this PEIR, the District's 2025 Periodic Evaluation indicates that current groundwater level conditions generally reflect progress toward groundwater sustainability (DWR 2025b). Thus, as the VCIP would be implemented pursuant to the GSP to promote groundwater sustainability in the Subbasin, it would not impede sustainable groundwater management of the Subbasin. As further demonstrated below, implementation of the VCIP would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge.

VCIP Energy Resource Plan

VCIP solar and energy storage facilities would involve limited use of groundwater during the construction, operation, and decommissioning phases, as discussed below.

Project Construction

During grading and construction for solar and energy storage projects, 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 Chapter 2. *Project Description*, it is estimated that a typical 250-MW solar project (with 250-MW battery storage facility) would require a total of 240 AF of water (at 0.15 AF per acre) over an approximately 1,600-acre site during its one-year construction period, or approximately 1 AF per MW. It is anticipated that all construction water would be obtained from existing agricultural wells in the Plan Area.

Current groundwater pumping in the area varies substantially from year to year depending on availability of CVP contract water delivered through the District's water distribution system. During years when the District receives most of its CVP water allocation, groundwater pumping provides a relatively minor portion of irrigation requirements. During the 10 years between 2015 and 2024, the District received an average of 36 percent of its contract water. In 2014, 2015, 2021 and 2022, the District received a "zero" allocation of CVP contract water, and in 2016 received 5 percent of its CVP contract water (WWD 2025a). To meet the irrigation

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requirements of planted crops under such conditions, private landowners on non-District-owned lands augment reduced CVP supplies with pumped groundwater or by acquiring supplemental water. But since the groundwater is relatively high in salinity, the generally low salinity tolerant crops limits the effectiveness of blending groundwater with higher quality CVP contract water. Due to the unavailability of CVP contract water during the years noted above, combined with the quality and quantity constraints on groundwater pumping, an average of approximately 189,640 acres within the District were fallowed annually between 2015 and 2024, representing approximately 34 percent of the irrigable farmland² in the District (WWD 2025a).

As indicated above, SGMA requires all high- or medium-priority basins identified by DWR to be managed by a GSA. The VCIP Plan Area is located entirely within the Westside Subbasin. As the primary surface water supplier and local agency within the Subbasin, the District is the designated GSA for the Subbasin. Fresno County also serves as the GSA for the portions of the Subbasin that are within the County's jurisdictional boundaries and outside the District's boundaries.

DWR designated the Subbasin as critically overdrafted, which required the District to prepare a GSP by January 31, 2020. The Fresno County Board of Supervisors adopted the Subbasin GSP on January 7, 2020. On January 8, 2020, the District's Board of Directors adopted the GSP for the 622,215-acre Subbasin (which includes the District's entire 614,700-acre service area). The GSP determined that the estimated sustainable yield for the historical period (1989-2015) across the Subbasin is 305,000 AFY (DWR 2025a). To manage groundwater during the initial years of GSP implementation, the GSA established an interim allocation of groundwater extraction intended to manage demand by equally distributing total annual pumping from the Subbasin based on overlying land acreage. The groundwater allocation framework includes a transition period from 2022 to 2030, in which a uniform annual allocation is initially established at 1.3 AF per acre, to be subsequently reduced each year by 0.1 AF per acre, starting in 2024, until 2030 when the allocation would reach the long-term limit 0.6 AF per acre per year. Groundwater will be distributed based on per-acre land ownership for all eligible lands (DWR 2025a, p. ES-13). For purposes of this PEIR, groundwater supply available to the reasonable and beneficial uses associated with VCIP implementation is assumed to be up to the long-term allocation of 0.6 AF per acre per year.

As described in Appendix F and Section 4.17. *Utilities and Service Systems*, the total water demand from construction of VCIP energy and infrastructure projects would be approximately 20,838 AF over approximately 136,000 acres, or an average of 0.153 AF per acre (see Table 2 in GSA in Appendix F of this PEIR). It is estimated that the full buildout of the VCIP Energy Resource Plan would require a total of 20,400 AF of groundwater for construction during the 10-year buildout period. Based on experience with similar projects located on sites with similar physical conditions, the water demand for preparation and construction of a typical 1,600 -acre solar facility project site would average 0.15 acre-feet per acre (AF/acre), resulting in a total consumption of 240 AF of water during a 12-month construction period (see Appendix F of this PEIR and Section 4.17. *Utilities and Service Systems*). Between years 2029 through 2032, construction demands would peak at 2,227 AFY, with approximately 14,771 acres of construction during each of these peak years. This volume of groundwater pumping represents 25 percent of (i.e., 4 times less than) the 0.6 AF per acre per year allocation established by the GSP to achieve sustainable groundwater management and ensure pumping is within the long-term sustainable yield.

² Based on approximately 568,000 irrigable acres within the District, of which 525,000 acres eligible for groundwater allocation under the GSP.
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As described in Appendix F and Section 4.17. *Utilities and Service Systems*, groundwater would be available for construction on potential projects on private and District-owned lands. Groundwater from agricultural wells on the project site or nearby would be available on private lands pursuant to groundwater allocations of 0.6 AFY/acre associated with those lands (i.e., an annual allocation of 38,400 AFY for 64,000 acres of private lands). Groundwater from agricultural lands in the vicinity would be available for use on District-owned lands through District-approved groundwater transfers (see Appendix F). Relative to the GSP's long-term allocation of 0.6 AFY/acre, the limited quantities of groundwater pumped during construction would be consistent with and promote sustainable groundwater management of the Subbasin and not exceed the sustainable yield in the Subbasin, and therefore would not contribute to the depletion of groundwater or contribute to the lowering of local groundwater levels. As such, the impact of VCIP project construction on groundwater resources would be less than significant.

Solar Facility Operation

During operation of each solar facility, non-potable water will be required for activities such as panel cleaning, watering sheep (if the facility owner/operator elects to employ sheep grazing), 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 6.05 AF per year over a typical 1,600-acre project site, or 0.004 AF per acre per year or 0.6 AF per quarter-section (160 acres). For context, the average irrigation demand for crop production within the District is approximately 2.6 AF per acre per year, or 416 AF per quarter section.

Operational water supplies would be obtained from various sources depending on land ownership. For solar and energy storage facilities located on privately-owned lands, operational water supplies would be provided by the underlying landowner from its surface and/or groundwater allocations. If the District cannot provide the surface water supply from its CVP contract, operational water would be obtained from existing on-site agricultural wells or from surface water transferred into the District. As provided in Appendix F and Section 4.17 *Utilities and Service Systems*, it is conservatively assumed that all non-potable operational water supplies for energy projects on private lands would be obtained from groundwater pursuant to the long-term groundwater allocation of 0.6 AFY/acre associated with those lands. These allocations are consistent with the Subbasin's long-term sustainable yield and are more than sufficient to meet operational demands of approximately 0.004 AFY/acre.

For solar facilities on lands purchased or leased (or with easements) from the District, the District would provide operational supplies with M&I CVP contract water. The District's "Article 19, Regulations Regarding the Application for and use of Municipal and Industrial Water within Westlands Water District" establishes an annual allocation of CVP contract water for PV solar projects (WWD 2023b). Solar PV facilities on District-owned or reconveyed lands are eligible to receive up to 5.0 AF per quarter-section per year for operational uses. As described in Appendix F, during years of extreme shortage of surface water supplies, the District would continue to provide M&I supplies to solar and energy storage facilities on District-owned lands through its health and safety allocation from USBR. As noted above, the operational water usage rate at a typical 250-MW solar and energy storage facility is estimated to be 0.67 AF per quarter-section per year, which is well within the District's maximum annual allowance of 5.0 AF per quarter-section. As explained in Appendix F and Section 4.17. *Utilities and Service Systems*, project proponents on District-owned lands may also purchase supplemental surface water and groundwater credits from other landowners for use on District-owned lands.

Small quantities of potable water would be required at the solar facilities for domestic uses. Potable water would be delivered to the facility by a commercial water delivery service. The typical 250 MW solar plus {00081405.1}

energy storage facility would include a water storage tank for potable water which would provide for drinking, hand washing, and toilet flushing. The water tank would be refilled regularly at a rate of approximately 5,000 gallons per month. The potable water would be provided by a commercial supplier who would purchase it from a municipal water source outside the Subbasin.

Increases in impervious surface coverage of VCIP project sites would not be substantial, with hard surfaces only created at the O&M facility, substation, and battery storage facilities, and at the equipment pads that would be widely dispersed throughout the project site. As provided under Impact HYD-3, at least 90 percent of each typical project site would consist of permeable surfaces. The solar panels themselves would be elevated above ground level, with vegetation (annual grasses) covering the permeable soils beneath and around the solar arrays. 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 on-site. The insubstantial addition of impervious surfaces would not prevent rainfall from percolating into the underlying soils. The runoff from these surfaces would be displaced to immediately adjacent vegetated areas and would be readily absorbed into the ground. Therefore, the impact of operation of the VCIP energy resource projects on groundwater recharge would be less than significant.

Decommissioning

Untreated water would be required during decommissioning of each solar and energy storage facility. Similar to construction, it is anticipated that groundwater would generally be used for decommissioning, although supplemental surface water may be available. The volume of water required is expected to be less than the volume required during the construction phase because vegetative cover would be retained on each site during deconstruction, and there would be little exposed soil that would require watering for dust suppression (see Appendix F and Section 4.17 *Utilities and Service Systems* for additional detail). The exposed areas would comprise approximately 10 percent of each solar facility site and would include the areas where foundation pads (e.g., at former substations, energy storage facilities, and O&M buildings) and gravel driveways would be removed, where soils would be tilled and loosened to textures suitable for cultivation. Similarly, water would not be required for soil conditioning during grading. The source of water during decommissioning is expected to be from the existing agricultural wells located in the vicinity of each facility, as described above regarding construction. The total groundwater pumped during decommissioning is expected to be substantially less than the estimated 250 AF required during construction of a typical 250-MW solar and energy storage project located on an approximately 1,600-acre site. Even assuming that water demand during decommissioning would be the same as during construction (i.e., approximately 20,400 AF), this would represent an average volume of about 0.15 AF per acre. This quantity is substantially less than the 0.6 AF per acre per year allocation established by the GSP to achieve sustainable groundwater management and ensure pumping is within the long-term sustainable yield. Therefore, the limited water demands during decommissioning would be consistent with and promote sustainable groundwater management of the Subbasin. The groundwater pumped during decommissioning would not substantially decrease groundwater supplies or contribute to the lowering of the local groundwater table. Therefore, the impact of VCIP project decommissioning on groundwater resources would be less than significant.

Summary

All groundwater use related to implementation of the potential solar/BESS projects under the VCIP would be consistent with the GSP and well below the 0.6 AF per acre per year allocation established by the GSP to achieve sustainable groundwater management and ensure pumping is within the long-term sustainable yield.

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As such, implementation of the solar/BESS projects would not substantially decrease groundwater supplies. As at least 90 percent of each project site would be retained in permeable surfaces, these projects would also not interfere substantially with groundwater recharge.

Construction of all 21,000 MW of the VCIP solar and energy storage projects would require a total of 20,400 AF of groundwater over an approximately 10-year period. The existing irrigation demand on the 64,000 acres of private lands within the DFAs is approximately 166,400 AF per year (based on irrigation demand of 2.6 AF/ac), or 1,664,000 AF over a 10-year period. Under the GSP's long-term allocation of 0.6 AFY of groundwater per acre, the owners of these 64,000 acres are entitled to pump 38,400 AFY, or 384,000 AF over a 10-year period. Thus, as the total groundwater use associated with construction of the potential energy/BESS projects under the VCIP over a ten-year period is substantially less than the *annual* quantity of groundwater that may be sustainably produced from the privately-owned DFA lands, these VCIP projects would not substantially decrease groundwater supplies. (The 72,000 acres of District-owned lands in the VCIP development areas have no irrigation water demand under existing conditions.)

Operation and maintenance of VCIP solar and energy facilities would require about 0.0042 AF per acre per year, or 572 AFY for all VCIP facilities upon completion. For the same reasons provided above, the use of this insubstantial quantity of groundwater would not substantially decrease groundwater supplies.

Implementation of the VCIP energy resource plan would not substantially decrease groundwater supplies or substantially interfere with groundwater recharge, and thus the impact of the VCIP implementation on sustainable groundwater management of the Subbasin would be *less than significant*.

VCIP Infrastructure Plan

During construction of the collection substations, gen-tie lines, and transmission lines, water would be needed for dust suppression and cleaning, and in mixing of concrete for tower foundations. Non-potable water would be purchased from local water sources and hauled to each tower site, pulling and tensioning site, or staging area. As described in Chapter 2. *Project Description*, the overall acreage subject to temporary disturbance would be about 3,000 acres and would occur at isolated locations over 5 substation sites, 260 miles of gen-tie corridor, and 79 miles of transmission corridor. Assuming a water usage rate similar to construction of the VCIP solar and energy storage facilities, or 0.15 AF per acre, the total water demand for infrastructure construction would be approximately 450 AF. For context, this would be equivalent to the irrigation requirements of about 173 acres of agricultural land for one year (assuming the average District water application rate of 2.6 AFY per acre). If all the water needed for infrastructure construction were obtained from groundwater, this insubstantial amount of groundwater pumping distributed over the length of the Plan Area would have virtually no effect on groundwater levels or the sustainable groundwater management of the Subbasin.

During operation of the infrastructure facilities, water use for maintenance and repair activities would also be insubstantial. While the infrastructure elements would be constructed over the groundwater basin of the San Joaquin Valley, the total area of impervious surfaces resulting from the infrastructure projects would be only about 150 acres dispersed over many transmission tower and substation equipment footings, which would not interfere with groundwater recharge.

Implementation of the VCIP infrastructure plan would not substantially decrease groundwater supplies or substantially interfere with groundwater recharge or the sustainable groundwater management of the subject

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basin, and thus the impact of the VCIP implementation on sustainable groundwater management of the basin would be *less than significant*.

Overall Impacts of VCIP Implementation

Implementation of the VCIP Energy Resource and Infrastructure Plans would not result in a substantial reduction in net groundwater use compared to existing conditions, would not interfere substantially with groundwater recharge, and would not impede sustainable groundwater management of the basin. Therefore, the overall impact of VCIP implementation in this regard would be *less than significant*.

Mitigation Measures: No mitigation is required.

Impact HYD-3. Alteration of Drainage Patterns, Erosion, Stormwater, Flooding

Implementation of the VCIP Energy Resource and Infrastructure Plans would not substantially alter the existing drainage patterns of the Plan Area, would not add substantial impervious surfaces, and would not result in substantial erosion or siltation on or off the project sites, or substantially increase the rate or amount of surface runoff or flooding on or off the project sites, or contribute runoff which would exceed the capacity of stormwater systems, or result in substantial additional sources of polluted runoff, or impede or redirect flood flows. (*Less-than-Significant Impact with Mitigation*)

VCIP Energy Resource Plan

Alteration of Existing Drainage Pattern

Several natural drainage courses emerge from the foothills of the Diablo Range and enter the western portion of the Plan Area (see Figure 4.10-1). The named drainages are described in Section 4.10.1 *Environmental Setting* and include Panoche Creek, Tumey Gulch, Arroyo Ciervo, Arroyo Hondo, Cantua Creek, Salt Creek, Martinez Creek, Domengine Creek, and Arroyo Pasajero. Except for Panoche Creek, these creeks pass under Interstate-5 and terminate west of the San Luis Canal / California Aqueduct. Panoche Creek crosses under Interstate-5 and over the Aqueduct, terminating approximately five miles northeast of the Aqueduct within the Plan Area. There are no other natural drainage courses in the Plan Area east of the Aqueduct. Other water courses in the vicinity include the Kings River to the southeast, Fresno Slough to the east, the San Joaquin River to the northeast. The Third Lift Canal runs adjacent to the Plan Area on the north, and numerous land owner irrigation ditches and swales occur throughout the Plan Area.

Most of the drainage courses named above pass through or alongside DFA lands which are planned for solar and energy storage facilities. Since the typical 250 MW solar and energy storage projects that will be proposed for the Plan Area would cover approximately 1,600 acres, each project will have sufficient design flexibility to avoid direct disturbance to natural water courses within or adjacent to the project sites. Given the virtually flat terrain of the Plan Area, it is expected that the energy projects would not substantially modify the ground contours or surface drainage patterns on their sites, or alter the existing irrigation ditches and swales that run through and adjacent to the project sites. Avoidance of existing drainage courses and minimal site grading are common

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characteristics of solar and energy storage projects that have been completed within the District's service area (including the Plan Area) and elsewhere in the San Joaquin Valley over the past 15 years.

The terrain of the VCIP Plan Area is virtually flat, with an average gradient of 0.2 to 0.4 percent depending on location. Under current conditions, rainfall percolates into the soil with little or no runoff. The energy projects would result in no substantial modification to 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 would 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, conditions allowing for stormwater to be mobilized and concentrated in sustained runoff flows are not expected to occur.

Addition of Impervious Surfaces

The VCIP energy projects would introduce insubstantial impervious surface coverage. The solar arrays would occupy approximately 90 percent of the site area and would be mounted on steel posts, with the ground beneath retained in vegetated cover. All planted vegetation would receive sufficient rainfall for germination and growth during the winter and spring of each year. The vegetation would senesce (die back) during the summer and fall but would remain in place to stabilize the soil. The vegetation would also receive sufficient sunlight for photosynthesis. As shown in Figure 2.5-1 Typical Solar Arrays, the rows of solar arrays would be widely separated to avoid casting shade on each other when the sun is low in the sky in the early morning and late afternoon. When solar arrays are in the horizontal position (at noon), about 67 percent of the solar field is not covered by solar panels and receives direct sunlight. Areas shaded at noon receive direct sunlight at various times in the mornings and afternoons as the trackers rotate the solar panels to follow the sun across the sky.

Impervious surfaces would consist of transformer and inverter pads, small operations buildings, footings and pads for on-site substations, switchyards, and battery storage containers, and small asphalt areas for handicapped parking. These structures would occupy a total of only approximately 5 acres (less than one percent of the project site). Internal driveways would typically take up the remaining 9 percent of each site and would be composed of permeable gravel or compacted earth to allow for some percolation of rainfall into the underlying soil. With at least 90 percent of each project site retained in permeable surfaces, the resulting increases in stormwater runoff would be insubstantial. The limited amount of runoff from 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.

Erosion and Siltation

Each solar and energy storage project would involve site clearing, rough grading, soil compaction, establishment of temporary construction staging areas, and trenching for solar arrays, and construction of internal access roads. Since the existing ground is virtually level, solar and energy storage development can be accommodated without large-scale 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 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

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construction phase. 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 minimized by the flat terrain. To avoid or substantially reduce water quality impacts, a comprehensive erosion control and water pollution prevention program would be carried out during site clearing, grading, and construction of each project. This program would follow the detailed BMPs specified in the SWPPP required to be implemented for each project. The SWPPPs would specify such practices as: designation of restricted-entry zones, sediment tracking control measures (e.g., crushed stone or riffle metal plates at construction entrances), truck washdown areas, diversion of runoff away from disturbed areas, protective measures for sensitive areas, outlet protection, mulching for soil stabilization during construction, and revegetation upon completion of construction within a given area. The SWPPPs would 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. The entire solar facility sites would be vegetated to prevent erosion and provide dust control. The exposed areas would be planted with an approved native 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. Seeding would be performed by a mechanical seed drill which would plant seeds in a continuous stream in furrows at a uniform rate and at controlled depth and then cover the planted seeds with soil. The reestablished vegetative cover would stabilize the soils and minimize the potential for post-construction erosion.

As discussed in Section 4.10.2. *Regulatory Setting*, the VCIP projects will be subject to the USEPA’s NPDES permit requirements for construction activities. These are implemented at the state level through the General Permit, as administered by the SWRCB and the RWQCB. Prior to construction grading for each project, the applicants will be required to file a NOI with the SWRCB to comply with the General Permit and prepare a SWPPP. As discussed above, the SWPPPs would detail the treatment measures and BMPs to control pollutants that will be implemented and complied with during the construction and post-construction phases of development. SWPPPs would also be required for the decommissioning phases at the end of the useful life of each solar and energy storage facility and would similarly specify BMPs to be implemented during decommissioning.

For each project, the construction contracts for the construction and decommissioning phases 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 Regional Board staff. The SWPPPs are to be updated each year while construction and decommissioning are ongoing.

With implementation of the comprehensive erosion and sediment control plans for each solar and energy storage project, as provided under existing regulations requiring the implementation of project drainage and erosion control measures, the potential erosion and sedimentation impacts associated with implementation of the VCIP Energy Resource Plan would be *less than significant*.

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Stormwater Runoff and Flooding

Each VCIP project would be subject to Fresno County Ordinance Code Title 17 which requires projects to provide for control of drainage, stormwater runoff, and prevention of erosion and sedimentation, to be implemented during review of construction plans and specifications prior to issuance of grading and building permits. The project proponent would be required by Fresno County to retain a qualified civil engineer to prepare a hydrology study which would determine potential flood depths at the site and make recommendations for avoiding or mitigating potential flooding impacts. These may include recommendations for construction of detention basins to capture any overland stormwater flows and to provide flood storage for overbank flows from adjacent drainage courses and canals. Any increase in storm flows would be accommodated by drainage infrastructure to be incorporated into each project. Therefore, potential project impacts related to increased stormwater runoff or flooding potential would be *less than significant*.

As discussed in Chapter 1. *Introduction*, several potential agencies could serve as lead agencies for approval of various elements of the VCIP. For projects subject to Fresno County's permit approval, the County's drainage and flood control requirements would ensure that drainage and flooding impacts would be substantially reduced or avoided. For VCIP solar and energy storage projects that may not be subject to the County's approval, Mitigation Measure HYD-1 is identified below to ensure that drainage and flood control measures are applied to all VCIP energy resource projects.

Stormwater Drainage Capacity and Potential for Polluted Runoff

Impervious coverage at each project site would be insubstantial and would not significantly affect runoff patterns at each site. The irrigation ditches and swales that run through and adjacent to many sites were designed and constructed to convey irrigation water through the area. With the advent of drip irrigation and other improvements, most of these ditches are no longer utilized for water conveyance and would provide incidental storage for irrigation return flows and stormwater runoff. In some areas there are drainage ditches that formerly conveyed irrigation return flows to tailwater ponds, which are now dry and may capture incidental stormwater flows. The VCIP solar and energy storage projects would not require internal stormwater drainage systems since most rainfall would percolate directly into the ground at each site. Given the insubstantial areas of impervious surface to be introduced by the projects, there would be little, if any, additional runoff generated by the projects under normal rainfall conditions (i.e., non-major storm events). To accommodate flows from major storm events, the projects would potentially include the placement of detention basins at the down-gradient borders of the project to capture any overland stormwater flows and to provide storage for overbank flooding from the adjacent canals. Any such drainage improvements to be incorporated into the projects would be identified in a project-specific hydrology study per the requirements of Mitigation Measure HYD-1.

Regarding the issue of polluted runoff, the VCIP solar and energy storage projects 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. During construction, the potential for leaks of oil or lubricants to result in polluted runoff would be insubstantial due to implementation of BMPs required under the project SWPPPs. During operation of the solar and energy storage facilities, the potential for leaks from maintenance vehicles and equipment used at the facilities would be addressed through proper maintenance practices and would not be substantially different in nature or quantity from those expected from farm machinery used in the Plan Area under pre-project conditions. Also, as discussed in Section 4.9. *Hazards and Hazardous Materials*, each VCIP solar and energy storage project would require preparation and

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implementation of a Hazardous Materials Business Plan (HMBP) which would ensure safe handling of hazardous materials at each site and would provide for effective response and cleanup in the event of an accidental release of hazardous materials. Therefore, the impacts associated with the potential for additional sources, rates, or amounts of polluted runoff to be generated by VCIP projects would be less than significant.

In summary, any impacts associated with the potential for the VCIP solar and energy storage projects to create or contribute runoff water that would exceed the capacity of stormwater drainage systems or result in substantial additional sources of polluted runoff would be *less than significant*.

Impede or Redirect Flood Flows

According to the Flood Insurance Rate Maps (FIRM) covering Fresno County, portions of the VCIP Plan Area lie within the mapped 100-year and 500-year flood zones designated by FEMA. As shown in Figure 4.10-1, flooding during the 100-year (1% Annual Chance Flood Hazard) event would be expected to occur mainly along the drainage courses in the western portions of the Plan Area, and in scattered locations within the low-lying areas along the eastern boundary of the Plan Area. Part of the northeastern portion of the Plan Area would also be subject to flooding during the 500-year storm event (FEMA 2009).

Since substantial areas within the DFAs are in mapped flood-prone areas, it is expected that some solar and energy storage projects would be at least partially subject to flooding during the 100-year event, and to a lesser extent, the 500-year event. Based on hydrologic modeling conducted for recently approved renewable energy infrastructure projects within the Plan Area, the depth of flooding in the flood-prone areas is expected to be less than 1 foot, with most flood-prone areas subject to flooding depths of less than 0.5 feet (CEC 2025b).

The typical solar and energy storage project would result in less than one percent impervious surface coverage over the entire project site. Most of the remaining area of the project sites would be covered with arrays of solar modules mounted on steel posts such that the modules themselves are positioned above flood elevations. The impervious elements that would be subject to flooding include solar mounting posts, power conversion station (PCS) pads, O&M buildings, substation pads and equipment, battery storage containers, and fence posts. (The typical project would include 250 MW of solar PV generating capacity and 250 MW of battery storage capacity.) If an entire project site was subject to flooding, the O&M building, PCS pads, substation equipment, and battery containers would need to be placed on raised pads above flood elevation. This would result in less than one percent reduction in flood storage and conveyance capacity, which would result in insubstantial displacement of flood flows. Projects could be designed to place larger structures requiring impervious surface coverage, such as O&M buildings, project substations, and battery storage systems, outside the flood-prone areas of the site, making it unlikely that project sites would be entirely located in the floodplain. Given that flood depths are expected to be less than 0.5 foot, on average, and the likelihood that most projects would have sufficient space to locate structures outside the floodplain, the potential for any VCIP project to impede or redirect flood flows would be insubstantial.

For stand-alone energy storage projects, the largest projects are expected to have a capacity of up to 1,150 MW and would cover an area of up to 50 acres. Up to 50 percent of the battery sites would be covered with battery structures, which could impede or redirect flood flows. However, the stand-alone battery storage facilities are expected to be located near the collection substations to minimize transmission distances between the battery facilities and the substations. Four of the five substations are located well outside flood-prone areas, and it is expected that the stand-alone battery facilities would likewise be sited to avoid lands subject to flooding. Although collection Substation 5 would be located within the edge of a flood zone, nearby DFAs located outside {00081405.1}

the flood zone are available for energy storage. Therefore, the potential for stand-alone battery facilities to impede or redirect flood flows is expected to be insubstantial.

To address potential flooding impacts, the VCIP energy projects would be subject to Fresno County Ordinance Code Title 17, which requires projects to provide for control of drainage, stormwater runoff, and prevention of erosion and sedimentation during review of construction plans and specifications prior to issuance of grading and building permits. Each project proponent would be required by Fresno County to retain a qualified civil engineer to prepare a hydrology study which would determine potential flood depths at their site and make recommendations for avoiding or mitigating potential flooding impacts. This would include possible recommendations for avoiding placement of structures within flood zones and/or setting any affected structures on raised foundation pads above the calculated flood elevations. As discussed above, volume of displacement by VCIP structures during a 100-year or 500-year event would be insubstantial and the impact in terms of impeding or redirecting flood flows would be less than significant. However, as discussed above, Mitigation Measure HYD-1 has been identified to provide for drainage and flooding mitigation for all VCIP development, particularly projects that may not be subject to Fresno County permit authority.

In summary, the VCIP solar and energy storage projects would not substantially alter the drainage pattern of the Plan Area, and would not add substantial impervious surfaces. Therefore they would not result in substantial erosion or siltation, substantially increase the rate or amount of surface runoff or flooding, contribute runoff which would exceed the capacity of stormwater systems or result in polluted runoff, nor impede or redirect flood flows within or outside the Plan Area. As discussed above, the potential impacts resulting from implementation of the VCIP Energy Resource Plan related to drainage patterns, erosion, stormwater, and flooding would be *less than significant*.

VCIP Infrastructure Plan

Alteration of Existing Drainage Pattern

No substations or connecting transmission lines would be located near existing creeks; however, some gen-tie lines west of the Aqueduct may cross existing drainage courses in that area. Also, the connecting transmission line between Substation 3 and the planned PG&E Manning Substation would cross Tumey Gulch. Existing creeks would be largely avoided, and the crossing of Tumey Gulch could be readily accommodated by spanning the creek and placing transmission towers well back from the creek banks. Similarly, existing irrigation canals and ditches would also be avoided by placing substations and transmission towers well outside these features. Given the flatness of the terrain and the relatively small footprints of the substations and very small footprints of the transmission towers, the grading and excavation involved in their construction are insubstantial and would not alter existing drainage patterns. Therefore, the potential impacts of VCIP infrastructure upon existing drainage patterns would be *less than significant*.

Erosion and Siltation

Construction of the collection substations, gen-tie lines, and connecting transmission lines would involve soil-disturbing activities such as grading for substation pads and leveling and excavation for tower pads. Construction of these infrastructure elements would be subject to the same NPDES requirements for preparation and implementation of SWPPPs as discussed above for the solar and battery storage facilities. The BMPs would be the same or similar to those described above. Notable additional practices would include minimizing disturbance areas and revegetation of disturbed areas upon completion of work in a given area. Temporary facilities such as

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staging areas, pulling sites, and temporary access roads would be sited at specified distances from water bodies and aquatic habitat. A full list of applicable measures, as required, would be included in construction plans and specifications for the infrastructure projects. Implementation of regulatory requirements for erosion and sedimentation control during construction would ensure that potential erosion and sedimentation impacts associated with the gen-tie line would be *less than significant*.

Stormwater Runoff and Flooding

The infrastructure elements would result in very limited areas of new impervious surfaces. These features would consist primarily of concrete foundations for substation structures, and small concrete footings for gen-tie and transmission monopoles, which would be distributed over a large area within the Plan Area. The volume of additional runoff from these impervious surfaces would be insubstantial and would be readily absorbed into the ground adjacent to these features. The potential for these infrastructure elements to increase flood hazards is not substantial and any potential drainage and flooding impacts associated with implementation of the VCIP Infrastructure Plan would be *less than significant*.

Stormwater Drainage Capacity and Potential Polluted Runoff

As discussed above, the VCIP infrastructure elements would result in limited new impervious surface area at the dispersed substation and monopole sites and would not result in increased runoff or flooding potential. There are no existing stormwater drainage systems in the Plan Area, and none are needed for the VCIP infrastructure. Operation of the substations, gen-tie lines, and transmission lines would involve periodic inspection, maintenance, and repair activities that involve travel to the substation and tower sites by maintenance vehicles, which could leak minor amounts of oil or lubricants. The potential for the very small amounts of these pollutants to become entrained in stormwater runoff and be conveyed to downstream water bodies would be insubstantial. In addition, the infrastructure projects would be subject to the pollution control measures contained in the SWPPPs required for each project, which would address the potential for discharge of construction-related pollutants. Potential impacts of VCIP infrastructure projects related to stormwater drainage systems or polluted runoff would be *less than significant*.

Impede or Redirect Flood Flows

As shown in Figure 4.10-1, Substation 5 would be located within the 100-year floodplain associated with Arroyo Pasajero. The structural elements of the substation would need to be installed on raised pads above flood elevation, resulting in insubstantial displacement of flood flows. Similarly, locating some transmission and gen-tie towers within the 100-year and 500-year floodplains may be unavoidable. However, displacement at many small sites dispersed over a large area would have an insubstantial effect on flood flows. Impacts of the VCIP infrastructure projects related to the potential to impede or redirect flood flows would be *less than significant*.

Overall Impacts of VCIP Implementation

Implementation of the VCIP Energy Resource and Infrastructure Plans would not substantially alter the drainage pattern of the Plan Area; add substantial impervious surfaces; result in, or substantially increase the rate or amount of, substantial erosion or siltation on or off the project sites; contribute runoff which would exceed the capacity of stormwater systems or result in polluted runoff; or impede or redirect flood flows. Therefore, any potential impacts regarding these hydrology and water quality issues would be *less than significant*.

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As discussed in Chapter 1. *Introduction*, several potential agencies could serve as lead agencies for approval of various elements of the VCIP. For projects subject to Fresno County's approval, the County's drainage and flood control requirements would ensure that drainage and flooding impacts would be substantially reduced or avoided. For VCIP solar and energy storage projects that may not be subject to the County's approval, Mitigation Measure HYD-1 is identified below to ensure that drainage and flood control measures are applied to all VCIP energy resource projects.

Mitigation Measure HYD-1: Complete Hydrology Study

A construction-level hydrology study shall be prepared for each VCIP project prior to grading and construction. The study shall be prepared by a qualified civil engineer who shall determine stormwater volumes and potential flood depths at the site and make recommendations for control of site drainage and avoidance or mitigation of potential flooding impacts. These may include recommendations for construction of detention basins to capture any overland stormwater flows to prevent stormwater runoff from leaving the project site, and raising project elements above calculated flood elevations. The recommendations of the hydrology study shall be incorporated into the project construction plans.

Significance After Mitigation: Less-than-significant impact.

Impact HYD-4. Release of Pollutants due to Flooding, Tsunami, Seiches

Implementation of the VCIP Energy Resource and Infrastructure Plans would involve little or no risk of release of pollutants due to inundation of the VCIP Plan Area from flood hazard or inundation due to dam failure, tsunami, or seiches. (*Less-than-Significant Impact*)

VCIP Energy Resource Plan

Flood Hazard

As discussed under Impact HYD-3 above, portions of the Plan Area lie within mapped flood-zones, so it is expected that a number of solar and energy storage projects would be at least partially subject to flooding during the 100-year event, and to a lesser extent, the 500-year event. The solar and energy storage sites would be largely covered with arrays of solar modules mounted on steel posts such that the modules themselves are positioned above flood elevations. Any inverter/transformer equipment located within flood-prone areas would be installed on raised pads above flood elevations. Similarly, any project substations, O&M buildings, and energy storage facilities that may be unavoidably sited within flood zones would be constructed on raised pads above flood elevations. Therefore, the only project elements that would be in contact with flood waters would be some steel posts supporting solar arrays, and perimeter fencing. These steel elements are inert and include no materials that could be a source of water pollutants. Therefore, within the areas of the Plan Area that are subject to flooding during 100- and 500-year events, there is no risk of release of pollutants due to flooding at the solar and energy storage project sites and the impact would be *less than significant*.

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Inundation Due to Dam Failure

As discussed in Section 4.10.1. *Environmental Setting*, most of the Plan Area is located outside the mapped inundation areas for all reservoirs in the region except the northwestern margin of the Plan Area, which may be subject to risk of flooding in the unlikely event of dam failure at Friant Dam or Pine Flat Dam. As such, there is an insubstantial and speculative risk of release of pollutants due to project inundation resulting from dam failure and the impact in this regard would be *less than significant*.

Tsunamis

Tsunamis are large and rapidly moving ocean waves that result from sudden and large-scale fault movement on the ocean floor. Due to the Plan Area's inland location more than 60 miles from the Pacific Ocean and given its elevation at over 170 feet above mean sea level, the VCIP Plan Area is not subject to inundation from tsunamis. As such, there is no risk of release of pollutants due to project inundation from tsunamis and thus there would be *no impact* in this regard.

Seiches

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 several reservoirs in the project region located in the Sierra Nevada and Diablo Range. However, as discussed above under "Inundation Due to Dam Failure," the failure of any nearby dams would result in an insubstantial risk of inundation within the northeastern margin of the Plan Area. It is expected that any seiches generated at these reservoirs would not result in dam failure and therefore the inundation zones from such seiches would be smaller than those resulting from dam failure. As such, there is no reasonably foreseeable potential for seiches to result in inundation of the VCIP Plan Area and no risk of release of pollutants due to project inundation from seiches, and thus there would be *no impact* in this regard.

In summary, there is an insubstantial and speculative risk of release of pollutants due to inundation of the VCIP Plan Area from flood hazard or release of pollutants due to inundation due to dam failure, and no risk of release of pollutants from tsunami or seiches; therefore, the impact in this regard is *less than significant*.

VCIP Infrastructure Plan

Flood Hazard

As shown in Figure 4.10-1, Substation 5 would be located within the 100-year floodplain associated with Arroyo Pasajero. The structural elements of the substation would be raised above flood elevation which would avoid contact with flood flows. The other four VCIP collection substations would be located outside of flood-prone areas. In addition, some gen-tie towers and transmission towers would be likely to be unavoidably sited in flood-prone areas and thus the poles would be in contact with flood waters during the 100-year or 500-year events. However, these towers, designed to withstand such flood events, would consist of concrete footings and steel poles which are inert and include no materials that could be a source of water pollutants. Therefore, within the segments of the gen-tie and transmission lines that would be subject to flooding during 100- year or 500-year events, there is an insubstantial risk of release of pollutants due to flooding and the impact would be *less than significant*.

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Inundation Due to Dam Failure

As discussed in Section 4.10.1. *Environmental Setting*, most of the Plan Area is located outside the mapped inundation areas for all reservoirs in the region, except a small area on the eastern margin of the Plan Area that may be subject to risk of flooding in the unlikely event of dam failure at Friant Dam or Pine Flat Dam. However, none of the collection substations are located within the potential inundation zones. Short segments of gen-tie line and connecting transmission line may be located in the inundation zone. However, the steel poles and concrete footings for these towers are inert and include no materials that could be a source of water pollutants. Therefore, within the segments of the gen-tie line and transmission line that are subject to inundation due to dam failure, there is an insubstantial risk of release of pollutants due to flooding and the impact in this regard would be *less than significant*.

Tsunamis

As discussed above, the Plan Area is not subject to inundation from tsunamis. As such, there is no risk of release of pollutants due to inundation from tsunamis and there would be *no impact* in this regard.

Seiches

As discussed above, the Plan Area is not subject to inundation due to seiches. As such, there is no risk of release of pollutants due to inundation from seiches and there would be *no impact* in this regard.

In summary, there is insubstantial or no risk of release of pollutants due to inundation of the VCIP infrastructure elements from flood hazard, inundation due to dam failure, tsunamis, or seiches; therefore, the impact in this regard is *less than significant*.

Overall Impacts of VCIP Implementation

As discussed above, the implementation of the VCIP Energy Resource and Infrastructure Plans would involve little or no risk of release of pollutants due to inundation from flood hazard, inundation due to dam failure, tsunamis, or seiches, and therefore the overall impact in this regard would be *less than significant*.

Mitigation Measures: No mitigation is required.

Impact HYD-5. Conflict with Water Quality Plan or Sustainable Groundwater Management Plan

Implementation of the VCIP Energy Resource and Infrastructure Plans would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. (No Impact)

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VCIP Energy Resource and Infrastructure Plans

Water Quality Plan

The VCIP Plan Area is within the San Joaquin River Hydrologic Basin Planning Area, for which the Basin Plan was most recently revised in 2019 (CVRWQCB 2019). The Basin Plan provides for protection of beneficial uses of surface waters including agricultural, industrial, recreational, biological, and groundwater recharge uses. The Plan Area includes drainage courses that emerge from the Diablo Range and all terminate within the western portion of the Plan Area. The Plan Area is not hydrologically connected to any major regional natural water features in the vicinity such as the Kings River, the San Joaquin River, and Fresno Slough.

The VCIP energy and infrastructure projects would not affect existing surface water features (including natural drainages, canals, and ditches), and groundwater recharge would not be affected due to the insubstantial amount of impervious surface created by the energy and infrastructure projects, as discussed under Impact HYD-3 above. The VCIP energy and infrastructure projects would be required to adhere to NPDES stormwater runoff requirements during construction and operation. This includes preparation and implementation of SWPPPs to control stormwater runoff and minimize erosion, siltation, and contamination by hazardous materials during construction, operation, and decommissioning, as required under existing laws and regulations. The septic systems for the VCIP solar and energy storage facilities would be designed, constructed and operated in compliance with the LAMP for OWTs and the Fresno County septic design standards, which would prevent groundwater impacts from wastewater disposal. The VCIP energy and infrastructure projects would not include any other waste discharges that could conflict with the Basin Plan.

Sustainable Groundwater Management Plan

As provided in *Section 4.10.2* (Sustainable Groundwater Management Act), the GSP identifies the proposed VCIP as a potential agricultural land repurposing project intended to promote sustainable groundwater management of the Subbasin. The GSP provides that implementing the VCIP and the District's Strategic Plan would "enhance the long-term sustainability of groundwater resources by addressing both water use reduction and regional economic transition, ensuring groundwater sustainability, and fostering environmental and community resilience." These complementary management actions are "intended to promote reduced groundwater demand while supporting the local economy through clean energy development" (DWR 2025a). Thus, as the VCIP would be implemented pursuant to the GSP to promote groundwater sustainability in the Subbasin, it would not conflict with a groundwater sustainability plan.

As discussed in detail under Impact HYD-2 above, the Plan Area is entirely located within the Westside Subbasin, for which the District is the designated GSA, with Fresno County serving as the GSA for portions of the Subbasin outside the District's boundaries. DWR designated the Subbasin as critically overdrafted basin. The 622,215-acre Subbasin area includes the District's entire 614,700-acre service area. As required by SGMA, the District prepared the Subbasin GSP, which its Board of Directors approved on January 8, 2020 (DWR 2020, 2025a). The GSP determined that the estimated sustainable yield for the historical period (1989-2015) across the Subbasin is 305,000 acre-feet per year (AFY) (DWR 2025a). The GSA has prepared a groundwater allocation framework to manage demand by equally distributing total annual pumping from the Subbasin based on overlying land acreage. The groundwater allocation framework includes a "transition period" from 2022 to 2030, with an initial uniform annual allocation of 1.3 AF per acre, which is reduced each year by 0.1 AF per acre, starting in 2024, until 2030 when the permanent annual allocation of 0.6 AF per acre will take effect. The groundwater will be distributed based on per-acre land ownership for all qualifying lands. For purposes of {00081405.1}

this PEIR, the groundwater supply available to VCIP development is assumed to be the long-term allocation of 0.6 AF per acre per year.

As discussed under Impact HYD-2, the VCIP energy and infrastructure projects would require an average of 0.15 AF per acre per year during construction and decommissioning, and 0.0042 AF per acre per year for operations, both of which are well below the GSA's long-term groundwater extraction limit of 0.6 AF per acre per year. Implementation of the VCIP Energy Resource and Infrastructure Plans would not conflict with the sustainable groundwater management plan. Instead, the VCIP would be implemented as an agricultural land repurposing program pursuant to the GSP and advance the GSP's goal of establishing sustainable groundwater management of the Subbasin, thereby facilitating implementation of SGMA.

In summary, the VCIP Energy Resource and Infrastructure Plans would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan and thus would have *no impact* in this regard.

Mitigation Measures: No mitigation is required.

4.10.3.2. TRANSMISSION CORRIDORS OUTSIDE VCIP

Transmission corridors for delivery of solar generation from VCIP projects to urban electricity markets in northern and southern California have been identified at a conceptual level in this PEIR to allow a general discussion of environmental impacts associated with transmission line development in these corridors for informational purposes. These transmission delivery corridors extend far beyond the District's boundaries and are not part of the proposed VCIP. Planning and approval of these outside transmission lines are under the jurisdiction of the state and federal energy regulatory agencies, public utilities, and cities and counties traversed by the transmission corridors. The following discussion provides an overview of potential impacts of the outside transmission lines with respect to hydrology and water quality.

Hydrology, Drainage and Flooding

The delivery transmission lines extending outside the Plan Area to regional load centers would have a total corridor length of approximately 348 miles and would pass through 10 counties and numerous watersheds, hydrologic basins, and groundwater basins (see Figure 2.4-1). The northern transmission corridor would extend from the valley floor to the lower foothills of the Diablo Range which it would follow for most of its length before entering the valley again in Alameda County. The western transmission corridor would commence on the valley floor and then traverse the Coast Ranges and pass through two small valleys on the way to Moss Landing. The southern transmission corridor would extend south along the valley floor before traversing the Tehachapi Mountains and the Antelope Valley to its terminus near Acton. These outside transmission corridors would cross over numerous small drainage courses, artificial canals, and one river – the San Benito River. The transmission lines would readily span these water features without direct impacts to the drainage courses, and temporary construction facilities such as conductor pulling sites and staging areas would be placed well outside the banks of the water bodies. Given the small footprints of the transmission towers, the minimal terrain alteration involved

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in their construction would not alter existing drainage patterns and any potential impacts related to drainage would be *less than significant*.

Many of the affected drainages are prone to overbank flooding during the 100- and/or 500-year events. In most cases, these flood zones are narrow enough to be spanned by the transmission lines. In areas of broader flood zones, such as those in parts of Kern County and the Antelope Valley, the transmission tower footings would be constructed to extend above flood elevations. Overall, very few transmission towers would be located directly within flood zones, and given the very narrow profiles of the towers, the potential for these towers to impede or redirect flood flows would be insubstantial, and any potential impacts related to flooding would be *less than significant*.

Water Quality

Construction of the outside transmission lines has the potential for erosion of exposed soils and spills of hazardous materials that could have an adverse impact on surface water quality. However, each transmission project would be required to prepare and implement a SWPPP that would specify measures to prevent and control erosion and discharges of hazardous materials. Therefore, any potential impacts related to erosion or additional sources of polluted runoff during construction would be *less than significant*. During operations, the transmission lines would have little or no reasonably foreseeable effect on water quality since the steel poles and concrete footings for the towers are inert and include no materials that could be a source of water pollutants, and any potential impacts would be *less than significant*.

The outside transmission lines would not require permanent staff, so there would be no need for septic systems for wastewater disposal. Therefore, the transmission projects would have no potential impact with respect to water quality standards and waste discharge requirements, and thus would not conflict with water quality plans.

Groundwater

The outside transmission line projects would require water during construction for dust suppression. As noted in Table 2.6-1, the outside transmission projects would disturb approximately 4,295 acres at the tower sites, the conductor pulling sites, and the construction staging areas. At a demand rate of 0.15 AF per acre, the total water supply required for 549 miles of transmission line would be approximately 644 AF. This is equivalent to the annual irrigation requirements for about 248 acres of land in agricultural production. For illustration, this volume of water use is well under the long-term extraction limit of 0.6 AF per acre per year for the District's private landowners. It would represent a one-time use (not annual) dispersed over many miles and numerous groundwater basins. It is anticipated that the dust suppression water would be purchased from private well owners or municipal utilities at various locations along the transmission corridors and hauled by tanker truck to the construction sites. The water sources would be dispersed over hundreds of miles and the volume of water obtained at any given location or within any groundwater basin would be insubstantial. During operation of the transmission lines, it is anticipated that no water would be required. Overall, the outside transmission lines would not have an appreciable effect in terms of groundwater depletion. Given the very narrow profile of the widely dispersed transmission towers, the added impervious surface area would be insubstantial, and as a result the transmission lines would not interfere with groundwater recharge. In summary, the outside transmission projects would not substantially deplete groundwater supplies, substantially interfere with groundwater recharge, or impede sustainable groundwater management of the relevant basins. Thus, any potential impacts related to groundwater would be *less than significant*.

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Inundation and Release of Pollutants

Regarding inundation due to dam failure, the outside transmission lines could be subject to inundation due to failure of small dams in the western foothills such as the dams at the Little Panoche Reservoir, the Los Banos Creek Reservoir, and others. However, the risk of failure of either of these dams is very low and is not reasonably foreseeable. In the unlikely event of a dam failure, the mapped inundation zones show that any resulting flooding would likely be relatively shallow and would have little to no impact on the outside transmission lines. The outside transmission lines would not be subject to inundation due to failure of major dams in the Sierra Nevada, such as the Friant, Pine Flat, Terminus, and Lake Isabella dams. There is no reasonably foreseeable risk of inundation from tsunamis or seiches. Moreover, the few tower structures that may be subject to potential inundation are composed of concrete and stainless steel, both of which are inert and contain minimal hazardous materials. As such, there is an insubstantial and speculative risk of release of pollutants due to inundation at tower sites resulting from dam failure.

Summary

The potential hydrology and water quality impacts resulting from construction and operation of the outside transmission lines would be avoided through strategic placement of towers and temporary facilities or would be reduced to less-than-significant levels through compliance with existing laws and regulations. Therefore, the potential hydrology and water quality impacts associated with outside transmission lines would be *less than significant*.

4.10.3.3. CUMULATIVE IMPACTS

Water Quality Standards and Waste Discharge Requirements

Cumulative projects mainly include large solar and energy storage projects that would include septic systems for wastewater disposal. (Note: 68 of the cumulative projects listed in Table 4.0-2 consist of solar and energy storage projects which comprise over 98 percent of the total by acreage.³) Cumulative projects located within the City of Lemoore would be served by the City's wastewater collection and treatment facilities, which would be subject to WDRs issued by the Regional Board. For cumulative projects with septic systems, those systems would be designed consistent with the Fresno County Plumbing Code, the Fresno County Improvement Standards, and the design criteria of the Fresno County LAMP as approved by the SWRCB (Fresno County 2017b), as well as the corresponding requirements of Kings County for projects in that county. Adherence to these requirements would ensure that the soils in the planned leach field areas would be capable of adequately accommodating the wastewater effluent generated by the solar and energy storage facilities. The septic systems of cumulative projects would be subject to the approval of the Fresno County Public Works and Planning Department (and the Kings County Environmental Health Services Division, as applicable), which would ensure compliance with all applicable standards in order to avoid impacts to groundwater quality. With implementation of the applicable septic system requirements for all affected projects, the cumulative impact

³ Table 4.0-2 includes a total of 72 cumulative projects; however, four of these projects comprise solar/BESS projects within the VCIP DFAs. Since the plan level impacts of the DFAs, including these projects, are addressed in the main impact analysis sections of this PEIR, they are not duplicated in the cumulative analyses.
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would be *less than significant*, and the contribution of VCIP implementation *would not be cumulatively considerable*.

Groundwater Supplies

Each cumulative project, including the projects constructed under the proposed VCIP, would require water during construction, operation, and decommissioning. The demand for water at each site would be highest during construction for purposes of dust control and soil conditioning. Based on review of available environmental documents for foreseeable solar and energy storage projects in the Subbasin, construction water for the solar and energy storage projects would generally be obtained from local groundwater sources within the Subbasin, but surface water would be available from the District in some years. Although the source of construction water for approved and pending non-energy projects has not been publicly disclosed, it is assumed that groundwater would be the source of construction water for these projects and would be available during all water year types for the reasons described above in Appendix F. The overall use of groundwater for construction of all approved and pending cumulative projects at a cumulative rate of 0.158 AFY/acre would be consistent with the Subbasin's long-term sustainable yield of 0.6 AFY/acre and therefore would advance the GSP's goals.

Operational water supplies for each solar project would mainly be used for panel washing. Operational water demands for VCIP solar and energy storage projects are estimated to be approximately 0.004 AFY per acre. It is anticipated that some cumulative projects, such as solar and energy storage projects on District-owned land that are subject to non-irrigation covenants, would receive M&I CVP contract water supplies from the District as provided under Article 19 of the District's Rules and Regulations. Projects on private land would be served by a combination of surface water and groundwater. However, since the specific mix of groundwater and surface water supply for each project cannot be predicted, it is conservatively assumed that all operational water supplies for energy projects on private lands would be obtained from groundwater. Based on the 64,000 acres of private lands in the VCIP DFAs, the total groundwater demand for project operations would be 256 AFY. These operational water demands would be well below the 39,000 AFY allocation (at 0.6 AFY per acre) for those 64,000 acres of privately owned land and therefore would be consistent with the estimated Subbasin's sustainable yield. Thus, if the cumulative projects on private lands, including the private VCIP projects, would rely solely on groundwater for operational needs, the collective water demands would be substantially below the GSA's long-term groundwater allocation of 0.6 AFY per acre and would therefore promote sustainable groundwater management. In addition, since most (i.e., 98%) of the cumulative projects consist of solar and energy storage projects that would retain 90 percent or more of their site areas in permeable vegetated cover, the projects would not interfere with groundwater recharge, individually or collectively.⁴ In summary, the cumulative projects would not deplete groundwater supplies, interfere with groundwater recharge, or conflict with or obstruct implementation of the GSP. Therefore, the cumulative impact related to groundwater supplies would be *less than significant*, and the contribution of VCIP implementation *would not be cumulatively considerable*.

Note: As discussed in Section 4.17. *Utilities and Service Systems*, several cumulative projects are outside the Westside Subbasin in the City of Lemoore which is a member of the South Fork Kings Groundwater Agency are

⁴ Solar projects/BESS projects are typically uniform in basic design, with 90 percent vegetated cover, nine percent driveways, and less than one percent impervious pads. See Section 2.5.1.1.2. under "Impervious Surfaces and Revegetation."

in Tulare Lake Subbasin. These projects are subject to the Sustainability Plan of the South Fork GSA and their water demands would not combine with water demands of cumulative projects within the Westside Subbasin, including VCIP projects, to result in a substantial cumulative effect (DWR 2022).

Stormwater Drainage

The VCIP Plan Area has similar natural conditions to the other cumulative projects within and outside the Plan Area, such as relatively flat topography, semi-arid climate, and relative lack of natural drainage courses on-site or nearby. The cumulative solar and energy storage projects would all maintain over 90 percent of their sites in permeable soil with vegetated cover. The relatively small amount of rainfall received at each site (e.g., approximately 6 to 8 inches per year within the Plan Area and adjacent areas) would tend to percolate into the ground and would not tend to leave the site or result in off-site drainage or water quality impacts. Even under major storm conditions, any off-site runoff would likely be captured by one of the many landowner irrigation ditches or agricultural swales in the area. Likewise, where cumulative projects are located in proximity to each other, there is virtually no potential for runoff from several sites to combine to result in downstream drainage or flooding impacts. Therefore, the potential cumulative stormwater drainage impacts would be *less than significant*, and the contribution of VCIP implementation *would not be cumulatively considerable*.

Water Quality

During construction and decommissioning of each cumulative project, including the VCIP projects, potential erosion of exposed soils and spills of hazardous materials that could have an adverse impact on surface water quality may occur. However, 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. During project operations, each VCIP solar and energy storage project would require preparation and implementation of a HMBP which would ensure safe handling of hazardous materials at each site and would provide for effective response and cleanup in the event of an accidental release of hazardous materials. The natural and built conditions at each project site would virtually eliminate the potential for stormwater runoff to leave the site. Therefore, the potential for polluted surface water to be mobilized and leave each site is limited and the potential for polluted surface water from several sites to create substantial additional sources of polluted runoff is insubstantial. Therefore, the cumulative impacts to water quality would be *less than significant*, and the contribution of VCIP implementation *would not be cumulatively considerable*.

Flooding

Portions of the VCIP Plan Area are subject to flooding during the 100- and 500-year storm events. As is the case with the VCIP projects, most of the cumulative projects are outside the mapped flood zones, while some of the planned solar and energy storage projects would be partially subject to flooding during the 100-year event. However, projects subject to flooding would be required by Fresno County Ordinance Code (and the Kings County Code of Ordinances, as applicable) to incorporate drainage control and flood protection measures to address any potential impacts within the project sites and adjacent properties. This requirement is reinforced by Mitigation Measure HYD-1 which covers all VCIP projects, including projects that may not be subject to Fresno County permit requirements. Implementation of these measures would limit any project's potential to impede or redirect flood flows or release pollutants due to flooding. In summary, any cumulative flooding impacts would be reduced to less-than-significant levels with drainage and flood measures incorporated into the design and implementation of affected projects, as required by existing laws and {00081405.1}

regulations. Therefore, the *cumulative impact related to flooding would be less than significant*, and the *contribution of VCIP implementation would not be cumulatively considerable*.

Inundation Due to Dam Failure

The VCIP Plan Area includes an area along its northeastern boundary that would be subject to inundation during failure of the Friant Dam on the San Joaquin River or failure of the Pine Flat Dam on the Kings River. The area adjacent to the southeast VCIP boundary in Kings County would also be subject to inundation resulting from failure of the Pine Flat Dam. This area includes the City of Lemoore and adjacent lands that include cumulative projects with a total area of approximately 2,000 acres. However, the risk of failure of either of these dams is considered very low, and the areas within the cumulative study area that are subject to potential inundation are located at the extreme western edges of the mapped inundation zones where resulting flooding would likely be shallow (Fresno County 2023b). Each cumulative project would require preparation and implementation of a HMBP which would ensure safe handling of hazardous materials at each site and would provide for effective response and cleanup in the event of an accidental release of hazardous materials. As such, there is an insubstantial risk of release of pollutants due to inundation at some cumulative project sites resulting from dam failure. Therefore, the cumulative impact in this regard would be *less than significant*, and the contribution from VCIP implementation *would not be considerable*.

Conflicts with a Water Quality Control Plan

As discussed under Impact HYD-5, the VCIP Plan Area is in an enclosed basin where incoming drainage courses terminate within the Plan Area and there are no drainage outflows from the Plan Area. As such, there is little or no potential that water quality impacts from VCIP projects would combine with projects outside the Plan Area to produce a cumulative effect. As shown in Figure 4.10-1, some cumulative projects are in the Plan Area but are not part of the proposed VCIP. Only one of these projects (the operational PG&E Cantua Solar Project) is near a drainage course (Cantua Creek). As discussed under Impact HYD-5, all VCIP energy and infrastructure projects would be sited and designed to avoid existing drainage courses, so VCIP implementation would not result in direct impacts to any drainage courses. In addition, implementation of BMPs as identified in SWPPPs for each cumulative project, including all VCIP projects, would address the potential for stormwater runoff to carry sediments and pollutants from the project sites to any water bodies in the Plan Area. Implementation of HMBPs during operation of all cumulative projects, including VCIP projects, would address the effects of any accidental releases of hazardous materials. Compliance with existing laws and regulations would reduce potential cumulative impacts regarding Water Quality Control Plans to *less-than-significant levels*, and the contribution of VCIP implementation *would not be cumulatively considerable*.

Conflicts with a Sustainable Groundwater Management Plan

Construction, operation, and decommissioning of VCIP energy and infrastructure projects would involve water demands that are substantially lower than the groundwater allocations established in the Westside Subbasin GSP, as discussed under Impact HYD-5. Implementation of the VCIP energy resource and infrastructure plans would not conflict with or obstruct implementation of a sustainable groundwater management plan. All but three of the cumulative projects within the Westside Subbasin listed in Table 4.0-2 consist of solar and energy storage projects that would have similarly low groundwater demands. The three non-energy projects all consist of pistachio processing plants, including the Kamm Avenue, Stamoules, and Turk Station plants. The Kamm Avenue plant will use only CVP contract water provided by the District. The Stamoules and Turk Station plants will use groundwater pursuant to agreements with the District that ensure groundwater pumping complies with the allocations and groundwater sustainability goals established in the Westside Subbasin GSP {00081405.1}

(Fresno Co, 2021a, 2023e). As mentioned above, several cumulative projects are located in the City of Lemoore which is located in the Tulare Lake Subbasin and is a member of the South Fork Kings GSA. These projects are subject to the Sustainability Plan of the South Fork GSA and their water demands would not combine with water demands of cumulative projects within the Westside Subbasin, including VCIP projects, to result in a substantial cumulative effect. Therefore, all cumulative projects, including the VCIP energy and infrastructure projects, would comply with SGMA, and there would be no cumulative conflicts with the GSP. Compliance with existing laws and regulations would reduce potential cumulative impacts regarding sustainable groundwater management plans to *less-than-significant levels*, and the contribution of VCIP implementation *would not be cumulatively considerable*.

Summary

The potential hydrology and water quality impacts resulting from cumulative development, including VCIP development, would be avoided or reduced to less-than-significant levels through compliance with existing laws and regulations as incorporated into the design and construction of the affected projects. Therefore, any cumulative hydrology and water quality impacts would be *less than significant*, and the contribution from VCIP implementation *would not be cumulatively considerable*.

Transmission Corridors Outside the VCIP

The potential transmission projects outside the Plan Area would not result in significant drainage, flooding or water quality impacts, would not result in any significant impacts to groundwater resources, would not result in potential release of pollutants due to inundation from dam failure, tsunami, or seiches, and would not conflict with or impede implementation of a water quality control plan or groundwater sustainability plan. Therefore, the hydrology and water quality impacts of the outside transmission lines would be less than significant, and the contribution to any cumulative impact would not be cumulatively considerable. It is beyond the scope of this PEIR to consider the cumulative hydrology and water quality impacts related to development in the 10 affected counties. It is reasonable to assume, however, that all cumulative projects would be constructed in accordance with all applicable state laws and regulations, local building codes, and other applicable standards that would require protection from flooding, avoidance of water quality impacts, and sustainable groundwater management. Accordingly, any cumulative hydrology and water quality impacts would be *less than significant*, and the contribution from the outside transmission projects *would not be cumulatively considerable*.

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4.11. LAND USE AND PLANNING

This section includes the following discussion and analysis related to land use and planning: existing environmental setting and regulatory context; criteria and methodology for evaluating impacts; and the results of the impact assessment, including identification of potentially significant impacts and corresponding mitigation measures to avoid or substantially lessen such impacts to the extent feasible.

PEIR Scoping Comments

During the PEIR scoping process, the District received three letters containing comments regarding land use and planning (see PEIR Scoping Report in Appendix A of this document). These comments are summarized below:

Pacific Coast Federation of Fishermen's Associations & Planning and Conservation League (PCL), et al.

(The letter submitted by the Pacific Coast Federation of Fishermen's Associations included PCL's letter as an attachment, so these entities submitted the same comments regarding land use.)

The comment letters submitted by these entities stated that "the choice of Westlands Water District as lead agency raises questions, given their lack of authority over land use conversions from agricultural to municipal and industrial purposes." The letters further comment that the "United States Bureau of Reclamation (BOR) should be notified of this proposed change in land use, and trigger a new water needs assessment for the district's Central Valley Project (CVP) contract supply."¹ These entities also commented that "[t]he potential for conversion of agricultural land to municipal and industrial use could conflict with local land use planning objectives." The letters also commented "it is imperative that the surrounding counties with land use decision-making and the federal and state government agencies engage rigorously in the comment process to ensure a holistic understanding of the project's impacts and the adoption of prudent mitigation strategies."

¹ The comment letter does not accurately represent the purpose of, or triggering events for, a water needs assessment, which are set forth in Article 3(a)(1) of the District's repayment contract with the United States for its CVP water supply, as follows:

"(a)(1) Notwithstanding any other provisions of this Contract, in the event the Secretary implements a program to retire land from irrigated agricultural production within the Contractor's Service Area as a means of addressing drainage in the San Luis Unit, the Contracting Officer shall conduct a water needs assessment to determine whether the Contract Total will be reduced."

A water needs assessment is required if the Secretary implements a program to retire land from irrigated agricultural production to address drainage, and is not triggered by either the objectives of, or the project activities anticipated in, the proposed VCIP. Implementation of the proposed VCIP would involve repurposing agricultural land in portions of the District on a long-term but temporary basis. The proposed VCIP provides for compatible agricultural uses such as sheep grazing in combination with project activities, and would establish requirements for decommissioning plans to remove project fixtures and equipment. The proposed VCIP also would establish requirements for financial assurances to ensure timely completion of the activities in the decommissioning plans. The existing agricultural character of the land would be retained during the operational life of VCIP projects, or upon cessation of project uses, would be suitable for agricultural uses.

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San Joaquin Valley Air Pollution Control District (SJVAPCD)

SJVAPCD's comment letter focused on the nexus between land use decisions and air quality. For example, SJVAPCD recommended "that development projects that result in a significant health risk" after applying all mitigation measures should "not be approved by the land use agency." The letter also noted: "Future development projects may require an environmental review and air emissions mitigation. A project's referral documents and environmental review documents provided to [SJVAPCD] should include a project summary, the land use designation, project size, air emissions quantification and impacts, and proximity to sensitive receptors and existing emission sources, and air emissions mitigation measures."

[Potential impacts associated with land use conversions are addressed below in Section 4.11.3. *Environmental Impact Analysis* under Impact LU-2. Potential impacts associated with air quality in land use decision making are addressed in Section 4.3. *Air Quality* under Impacts AQ-1 through AQ-4. The District's role as Lead Agency is addressed in Section 1.1.1. *Purpose of this EIR.*]

4.11.1. Environmental Setting

The VCIP Plan Area

The Plan Area encompasses approximately 535,000 acres in western Fresno County (County). Within the Plan Area, the VCIP would be implemented on approximately 136,000 acres identified as Development Focus Areas (DFAs), which include approximately 72,000 acres of District-owned land and approximately 64,000 acres of privately-owned lands. The predominant land use is agricultural production along with supporting infrastructure and commercial uses, small farming communities, and dispersed rural dwellings (see Figures 3.1-1 through 3.1-8 in Chapter 3. *Environmental Setting*). The main crops are tree crops such as almonds and pistachios, and row crops such as tomatoes, grapes, cotton, and wheat. The District conveys its Central Valley Project (CVP) contract water supply throughout the Plan Area by its extensive water distribution system which delivers imported water via the San Luis Canal / California Aqueduct. Other agricultural supporting infrastructure includes groundwater wells and mixing stations, storage sheds and shops, electrical power lines, and farm roads. For a detailed description of agriculture in the Plan Area, see Section 4.2. *Agriculture and Forestry Resources*.

The Plan Area includes numerous land uses that serve or are associated with agricultural production. These include several large agricultural processing facilities such as tomato processing plants, almond hulling plants, packing plants, cold storage facilities, and fertilizer manufacturing plants, as well as feed lots, and equipment and materials storage yards.

The Plan Area is served by an extensive roadway network which includes several state highways and county roads, all of which are in good condition and provide efficient transportation access throughout the Plan Area. The main transportation corridor through the Plan Area is Interstate 5 (I-5), which includes several clusters of highway commercial development, including restaurants and gas stations at the Panoche Road, West Jayne Avenue, and State Route (SR)-269 Interchanges, as well as hotels at the SR-198 interchange.

The Plan Area includes several unincorporated communities including Cantua Creek, Three Rocks/El Porvenir, Westside/O'Neill, and Five Points. These communities are primarily residential with limited commercial retail or service uses. The Plan Area includes two elementary schools at Cantua Creek and Westside. Otherwise, the

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Plan Area is sparsely settled with ranches, individual dwellings and clusters of dwellings (former farmworker housing) dispersed throughout the area.

Federal and state institutions and facilities in the Plan Area include: the Federal Correctional Institution (FCI) Mendota, the University of California West Side Research and Extension Center (WSREC) near Five Points, and a portion of Naval Air Station (NAS) Lemoore.

In addition to the California Aqueduct/San Luis Canal and I-5, other major regional infrastructure passes through the Plan Area. These include several high voltage transmission lines, two major regional electrical substations, as well as a number of smaller substations dispersed throughout the Plan Area. In addition, a major natural gas pipeline and a crude oil pipeline run parallel to I-5 through the Plan Area. The lone rail line in the Plan Area is the San Joaquin Valley Railroad line running southwest from the City of Fresno through the City of Huron and on to the Los Gatos Tomato Products Plant.

The Plan Area is also the site of several oil and gas fields which once included hundreds of production wells dispersed throughout the area. The oil and gas fields have been officially declared abandoned by the state, and almost all remaining wells have been plugged and abandoned. There is little or no surface evidence of these former wells, which were severed several feet below the ground surface, with the upper portion of the well pipe and surface structures removed.

The Plan Area also includes several large and medium-sized solar generating facilities, all of which were constructed over the past 10 years, mostly on lands previously acquired by the District for retirement from irrigated agriculture and repurposing. Twenty operating solar facilities currently occupy approximately 14,000 acres within the Plan Area, and an additional 11 pending and approved solar and energy storage projects will occupy about 17,200 acres in the Plan Area upon completion. These projects include supporting infrastructure such as on-site substations and gen-tie lines for interconnection to the nearest regional collection substations.

The landscape of the Plan Area has been highly altered by the introduction of agricultural cultivation over the past 100 years. There are a few remaining areas of natural and naturalizing vegetative cover. These include: the Pleasant Valley Ecological Preserve, which is partially located within the Plan Area near Coalinga, the Arroyo Pasajero Westside Detention Basin located north of Huron, and the Pilibos Wildlife Area located adjacent to the San Luis Canal north of N. Panoche Road. Some remaining natural vegetation occurs along the larger drainage courses such as Panoche and Cantua Creeks, and Arroyo Pasajero. Elsewhere, the vegetation on the farmlands of the Plan Area consists largely of landscape trees and shrub species planted around ranch complexes and individual dwellings.

Surrounding Land Uses

Outside the Plan Area boundaries, the adjacent and nearby lands to the north, east, and south are similar in character to the lands within the Plan Area, and consist predominantly of agricultural land in row crops, tree crops, and fallow fields along with widely dispersed rural dwellings and agriculture-related commercial uses. The lands to the west and southwest consist mainly of annual grasslands covering the foothills of the Diablo Range.

There are several incorporated cities in the Plan Area vicinity. These include the City of Huron, which is located within the Plan Area boundary but is not included in the VCIP's proposed DFAs. Other adjacent and nearby

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communities in Fresno County include the cities of Coalinga, Mendota, Firebaugh, and San Joaquin, and the unincorporated communities of Tranquillity and Helm. The hills near Coalinga include several major oil and gas fields, which are in decline but still have several wells in operation.

Nearby communities in Kings County to the south include the cities of Lemoore and Avenal, and the unincorporated communities of Kettleman City and Stratford. The adjacent areas of Kings County also include the major portion of NAS Lemoore, as well as the partially completed Westlands Solar Park and other solar facilities which occupy approximately 12,500 acres with another 6,000 acres approved for construction.

There are also several wildlife areas near and adjacent to the Plan Area. These include the Mendota State Wildlife Area, the Alkali Sink Ecological Reserve, and Alkali Sink Mitigation Bank, all of which are located south-east of Mendota and just outside the Plan Area. Other nearby wildlife areas include the Helm Wetlands Preserve located adjacent to the Plan Area near the community of Helm, the Five Points Wetlands Preserve located northeast of Five Points, the Pleasant Valley Ecological Preserve located partially within the Plan Area near Coalinga, and the Pilibos Wildlife Area located adjacent to the San Luis Canal north of N. Panoche Road.

4.11.2. Regulatory Context

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 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. The southeasternmost portion of the Plan Area is included in the Military Influence Area (MIA) of NAS Lemoore and is within the study area of the NAS Lemoore JLUS. Since DOD has no regulatory authority for local land use outside the boundaries of the NAS Lemoore, the JLUS includes planning recommendations for consideration by local jurisdictions.

The JLUS mapping indicates that the designated clear zones, which reflect approach and departure flight paths, extend no more than 3 miles from the NAS Lemoore base in any direction. The noise contour mapping prepared for the JLUS shows bands of noise contours exceeding 60 decibels community noise equivalent level (dB CNEL), which correspond closely to the flight corridors surrounding the airfield (JLUSPC 2011). The aircraft noise corridor is reflected in the Fresno County Zoning Map, which designates lands within an approximately 3-mile buffer zone from the naval installation, including the noise-impacted areas (exceeding 70 dB CNEL) south of the buffer zone, as “Exclusive Agriculture – 40 acre” (Fresno County 2025b). The intent of this zoning 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 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 areas north and south

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of the NAS Lemoore airfield are 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 land use recommendations that could be implemented at the local level. For both Fresno and Kings counties, the JLUS recommended the establishment of three “NASL Overlay District Zone” designations, with each zone corresponding to a different set of land use compatibility concerns. Overlay Zone I covers lands immediately adjacent to NASL on the east, west, and north. 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 recommendations for both counties state that within Overlay Zone III, NASL requires notification and review of proposed development plans. Areas of concern include object height, bird/aircraft strike hazard, nighttime lighting, renewable energy sites, planning infrastructure improvements, and inter-governmental coordination (JLUSPC, p. 2-47 and p. 4-34). JLUS Recommendation 16 for Fresno County states: “Establish Minimum Technical Standards for Renewable Energy Facilities Located within NASL Overlay Zones I, II, and III (JLUSPC 2011, p. 2-51 and p. 4-34). 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 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 nonreflective 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 Section 4.9. *Hazards and Hazardous Materials*.

Federal Aviation Regulations (FAR)

Part 77 of the Federal Aviation Regulations (FAR) – “Objects Affecting Navigable Airspace,” (CFR Title 14) establishes standards for determining obstructions to navigable airspace and the effects of such obstructions on the safe and efficient use of that airspace. The regulations require that the FAA be notified of proposed construction or alteration of objects – whether permanent, temporary, or of natural growth – if those objects would be of a height which exceeds the FAR Part 77 criteria. The height limits are defined in terms of imaginary surfaces in the airspace extending about two to three miles around airport runways and approximately 9.5 miles from the ends of runways having a precision instrument approach. The FAA must be notified of construction within 20,000 feet of an airfield. The FAA then evaluates structures to determine if a hazard to air navigation is present and can recommend marking, lighting, and flight communications. The FAA does not have authority over land use but can make recommendations to state and local agencies.

State

Williamson Act

The California Land Conservation Act of 1965, commonly known as the Williamson Act (Gov. Code, section 51200 et seq.), enables local governments to enter into contracts with private landowners to place lands within “Agricultural Preserves,” thus restricting use of those lands to agricultural-related open space, or compatible uses. The relevant provisions of the Williamson Act are discussed in detail in Section 4.2. *Agriculture and Forestry Resources*.

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Water Code Sections 37860-37861 (AB 2661)

AB 2661, enacted on September 25, 2024, and chaptered as Water Code sections 37860-37861, specifically authorizes the District to: (1) provide, generate, and deliver solar photovoltaic electricity, and construct, operate, and maintain any and all works, facilities, improvements, and property, or portions thereof, necessary or convenient for generating and delivering that electricity; (2) construct, operate, and maintain an energy storage system, as defined in section 2835 of the Public Utilities Code, and all works, facilities, improvements, and property, or portions thereof, necessary or convenient for the operation of an energy storage system, within the boundaries of the District; and (3) construct, operate, and maintain electrical transmission lines and all works, facilities, improvements, and property, or portions thereof, necessary or convenient for the conveyance of electricity within the boundaries of the District. As such, implementation of the proposed VCIP would be within the scope of the District's authorized governmental activities. The bill also requires that the District establish a community benefits agreement plan for the VCIP and related projects, with specific benefits to include but not limited to: job creation and training programs for local residents, use of local businesses and vendors, and financial contributions to community development projects and programs (Wat. Code, section 37860(b)-(d)). AB 2661 recognizes "the unique need of the Westlands Water District to support the development of solar electrical generation for the electrical grid and to facilitate the development of transmission capacity to help California reach its clean energy and climate goals."

Other State Regulatory Requirements and Programs

There are no other State of California land use regulatory requirements applicable to the VCIP or the Plan Area. The Plan Area is not located within the "Coastal Zone," and therefore is not subject to the California Coastal Act. Other state regulatory requirements or programs related to land use which may be applicable to the proposed VCIP are discussed under the corresponding environmental topic discussions in this PEIR. For example, the Alquist-Priolo Earthquake Fault Zoning Act and Seismic Hazard Mapping Act are discussed in Section 4.7. *Geology, Soils, and Paleontology*; and the state Aeronautics Act is discussed in Section 4.9. *Hazards and Hazardous Materials*.

California Public Utilities Commission

Transmission projects that would be constructed by or for an investor-owned utility (IOU) such as Pacific Gas and Electric Company (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 acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, 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 2023b).

Fresno County

Fresno County General Plan (General Plan)

The Agriculture and Land Use Element of the General Plan describes land use designations and development standards for unincorporated land within the County, and sets out goals, policies, and programs related to land use. The General Plan land use designation for almost the entire VCIP Plan Area and all DFAs is "Agriculture," which provides for the production of crops and livestock, and for location of necessary agricultural commercial centers, agricultural processing facilities, and certain nonagricultural activities (Fresno County 2024b).

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The following General Plan Land Use policies are relevant to the proposed VCIP:

Agriculture and Land Use Element

A. Agriculture

Goal LU-A To promote the long-term conservation of productive and potentially productive agricultural lands and to accommodate agricultural-support services and agriculturally-related activities that support the viability of agriculture and further the County's economic development goals.

Policy LU-A.1 Agricultural Land Conservation

The County shall maintain agriculturally-designated areas for agriculture use and shall direct urban growth away from valuable agricultural lands to cities, unincorporated communities, and other areas planned for such development where public facilities and infrastructure are available and can be provided consistent with the adopted General or Community Plan.

Policy LU-A.2 Agriculture-related Uses

The County shall allow by right in areas designated Agriculture activities related to the production of food and fiber and support uses incidental and secondary to the on-site agricultural operation.

Policy LU-A.3 Special Agricultural Uses

The County may allow by discretionary permit in areas designated Agriculture, special agricultural uses and agriculturally-related activities, including value-added processing facilities, and certain non-agricultural uses. Approval of these and similar uses in areas designated Agriculture shall be subject to the following criteria:²

- a. The use shall provide a needed service to the surrounding agricultural area which cannot be provided more efficiently within urban areas or which requires location in a non-urban area because of unusual site requirements or operational characteristics;
- b. The use should not be sited on productive agricultural lands if less productive land is available in the vicinity;
- c. The operational or physical characteristics of the use shall not have a detrimental impact on water resources or the use or management of surrounding properties within at least one-quarter (1/4) mile radius;
- d. A probable workforce should be located nearby or be readily available.

² As Policy LU-A.3 criteria 'e' through 'h' relate to the approval of commercial centers, value-added agricultural processing facilities, churches, schools and existing commercial uses, they are not applicable to the proposed VCIP.

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Policy LU-A.13 Agricultural Buffers

The County shall protect agricultural operations from conflicts with non-agricultural uses by requiring buffers between proposed non-agricultural uses and adjacent agricultural operations. Additionally, the County shall consider buffers between agricultural uses and proposed sensitive receptors when processing discretionary land use applications.

Policy LU-A.14 Agricultural Land Conversion Review

The County shall ensure that the review of discretionary permits includes an assessment of the conversion of productive agricultural land and that mitigation be required where appropriate.

Policy LU-A.15 Right-to-Farm Notice

The County shall generally condition discretionary permits for development within or adjacent to agricultural areas upon the recording of a Right-to-Farm Notice, which is an acknowledgment that residents in the area should be prepared to accept the inconveniences and discomfort associated with normal farming activities and that an established agricultural operation shall not be considered a nuisance due to changes in the surrounding area.

Policy LU-A.23 Farmland Conversion

For discretionary land use projects that are not directly related to or supportive of agricultural uses and which propose the permanent conversion of twenty acres or more of Prime Farmland, Unique Farmland or Farmland of Statewide Importance (as designated by the Farmland Mapping and Monitoring Program) to nonagricultural uses, the County shall consider and adopt feasible measures including, but not limited to:

- Acquisition of conservation easements at a 1:1 ratio for lands lost to nonagricultural uses.
- Fee title of agricultural mitigation land that may be held by a third party or the County.
- In lieu fees paid to the County that may be used to acquire future mitigation property.
- Mitigation banks.

The County may exempt projects from agricultural mitigation requirements when it has been determined that conversion is occurring pursuant to a local groundwater sustainability plan, or the project is for housing which is predominately for persons of low or moderate income as defined in section 50093 of the Health and Safety Code. Further, the County may exempt discretionary land use projects from agricultural mitigation requirements if it finds that the loss of agricultural land caused by the proposed conversion is outweighed by specific overriding economic, legal, social, technological, or other benefits of the conversion, as contemplated by section 21081(b) of the Public Resources Code. (Fresno County 2024b)

Westside Freeway Corridor Policies

The General Plan includes specific policies governing development along the I-5 Corridor. These policies are intended to manage commercial development along the freeway corridor in order to preserve the scenic amenities along the freeway. Specific interchanges are designated for more or less intensive development or are limited to agricultural uses. All other lands within one mile of the freeway are restricted to agricultural uses (Fresno County 2024b).

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Fresno County Airport Land Use Compatibility Plan (ALUCP)

The Fresno County ALUCP, prepared for the Fresno County Airport Land Use Commission (ALUC) in 2023, is intended to protect and promote the safety and welfare of residents, businesses, and airport users near the public use airports and NAS Lemoore in Fresno County, while supporting the continued operation of these facilities. Specifically, the ALUCP seeks to: ensure that people and facilities are not concentrated in areas susceptible to aircraft accidents; protect the public from the adverse effects of airport noise; and ensure that no structures or activities encroach upon, or adversely affect, the use of navigable airspace. The ALUCP contains a land use compatibility plan for each of the nine public use airports in Fresno County, which forms the basis for the ALUC's review of local agency land use actions for consistency with the land use compatibility policies and criteria of the ALUCP (Fresno COG 2023). (See Section 4.9. *Hazards and Hazardous Materials* for detailed discussion of the ALUCP.)

Fresno County Zoning Ordinance

As shown on the Fresno County Zoning Map, almost all VCIP Plan Area is zoned "AE" Exclusive Agricultural District, which is further divided into acreage-based designations. Most of the Plan Area is within the AE-20 zone where the minimum parcel size is 20 acres, while lands at the southern and western margins of the Plan Area are within the AE-40 zone where the minimum parcel size is 40 acres. The only non-agriculturally-zoned lands are in two unincorporated communities, including Cantua Creek, which has a small area zoned "R1-Single Family Residential" and a small area zoned "TP-Trailer Park Residential," and Three Rocks (El Porvenir), which has a small area zoned "R1-Single Family Residential." In addition, Three Rocks/El Porvenir and the unincorporated community of Westside have small areas zoned "AC-Agricultural Commercial Center" (Fresno County 2025b).

Under Fresno County Zoning Ordinance section 842.5.020.B, photovoltaic (PV) solar facility projects are permitted through the County's Unclassified Conditional Use Permit (UCUP) process, specifically under section 842.5.020.B.14., which pertains to "[p]ower production, storage and generation facilities (includes utility-scale photovoltaic facilities subject to the County's adopted Solar Facility Guidelines, wind farms and hydroelectric facilities subject to County jurisdiction), including without limitation any associated facilities for the storage or transmission of electrical energy" (Fresno County 2024a; Fresno County 2024j). On December 17, 2024, the Fresno County Board of Supervisors amended section 842.5.020.B to specifically include utility-scale PV storage facilities (i.e., battery energy storage systems (BESS)) among the listed land uses that require a UCUP. At this same time, Fresno County amended the definition of "Public utility facilities" under Article 7 of its Zoning Code as follows:

Fixed base structures and facilities for the collection, distribution, maintenance, provision, transmission, or disposal of gas, information, oil, power, storm and sanitary sewage, telecommunication, telephone cable services, and water by public utilities, and includes facilities for the generation or storage of electricity. . . . Notwithstanding the foregoing, "public utility facility" shall include, without limitation, facilities for the storage or transmission of electrical energy, owned or operated by a "local agency," as defined in section 53090 of the Government Code, including such facilities for the storage or transmission of electrical energy which are proposed in connection to a project otherwise permitted under section 53091, subdivision (e) of the Government Code (Fresno County 2024j)

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Prior to this amendment, Fresno County typically treated BESS as sufficiently similar to utility-scale solar facilities, recognizing that energy storage provides a needed service by addressing limitations of the electrical grid and makes it more resilient to disturbances and peaks in energy demand. Thus, the subject amendment is consistent with the County's practice of processing applications for BESS projects under its UCUP process subject to its Solar Facility Guidelines. For example, in October 2024, Fresno County approved the Key Energy Storage Project (CUP 3734), a stand-alone BESS project (Fresno Co. 2024d).

The VCIP infrastructure projects (gen-tie lines, substations, transmission lines) are also permitted in the AE zones under the category "Public Utility Facilities" if granted a Conditional Use Permit (CUP). Under Zoning Ordinance Article 7 (Definitions), this category is further defined as "Public Utilities Facilities, major" which include "[e]lectrical distribution and transmission substations and switching stations." Following the Fresno County Board of Supervisor's December 2024 amendments, electrical transmission lines are now expressly permitted in the AE Zone. However, as with BESS projects, the County has approved gen-tie lines for solar projects with UCUPs in the AE Zone prior to the December 2024 updates to the County's Zoning Code (e.g., CUP 3650 – Jayne Avenue Gen-Tie; CUP 3555 Scarlet Solar Energy Project; CUP 3671 Luna Valley Solar Project)(Fresno County 2019b, 2021a, 2021b)).

In addition, Fresno County Zoning Ordinance section 804.1.030 – *Exemptions from Land Use Permit Requirements* – enumerates certain activities, uses of land, and/or structures that are exempt from the land use permit requirements of the Zoning Ordinance. These exempt activities and uses include "Governmental activities," which are defined as: "*Any land use activities* conducted by a City, County, State or an agency of the State, or the Federal government on land owned or leased by the governmental agency (Zoning Ordinance Section 804.1.030 (B)(3) [italics added]). The exemption applies provided that "the activity or use is established and operated in compliance with applicable development standards" in the Zoning Ordinance, and that "permits and approvals required by other regulations," if required, are obtained in compliance with the Zoning Ordinance (Zoning Ordinance Section 804.1.030 (A)(1 and 2))(Fresno County 2024a). As discussed above, the District would implement the proposed VCIP pursuant to its authorized governmental activities on up to 72,000 acres of District-owned lands.

Fresno County Solar Facility Guidelines (Guidelines)

The Guidelines were adopted by the Fresno County Board of Supervisors on May 21, 2013, and revised on December 12, 2017. The Guidelines provide general guidelines and policies, as well as an outline for the process of evaluating solar facilities within Fresno County (Fresno County 2017c). Each of the solar facility guidelines and policies is briefly summarized below. (The full text of each Guideline is presented in Impact LU-2, along with a discussion of the potential consistency of VCIP projects with each Guideline.)

1. Submittal of information regarding the historical agricultural use of the project site.
2. Identification of the source of water for the project site.
3. Identification of the current status with respect to the Williamson Act.
4. Identification of soil types and mapping units applicable to the site.

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5. Description of measures planned to create a buffer between the proposed solar facility and adjacent agricultural operations.
6. Submittal of a Reclamation Plan detailing the measures to return the site to the agricultural capability.
7. Information on efforts to locate the proposed solar facility on non-agricultural lands and non-contracted parcels.
8. Submittal of a Pest Management Plan to manage weeds and pests that may impact adjacent areas.
9. Acknowledgement of the County's Right to Farm Ordinance.
10. Approved land use permit expires upon expiration of the solar lease.
11. Requirement to make all reasonable efforts to establish a point of sale in Fresno County for necessary equipment and materials.
12. Requirement to make reasonable efforts to hire locally.
13. Mitigate road damage caused by project construction deliveries to solar project and disclosure of the number of trips and the weight of anticipated shipments anticipated to the site.
14. Requirement to make reasonable efforts to purchase products and equipment from Fresno County manufacturing facilities and/or vendors.

Fresno County Right-to-Farm Ordinance

Fresno County Ordinance Code section 17.72.075(A) requires the recordation of right-to-farm notice for certain activities within 300 feet of an AE Zone District. The notice, which is required to be recorded with the Fresno County Recorder, is to be recorded in substantially the following form (Fresno County 2024i):

FRESNO COUNTY RIGHT-TO-FARM NOTICE

It is the declared policy of Fresno County to preserve, protect, and encourage development of its agricultural land and industries for the production of food and other agricultural products. Residents of property in or near agricultural districts should be prepared to accept the inconveniences and discomfort associated with normal farm activities. Consistent with this policy, California Civil Code 3482.5 (right-to-farm law) provides that an agricultural pursuit, as defined, maintained for commercial uses shall not become a nuisance due to a changed condition in a locality after such agricultural pursuit has been in operation for three years.

Pursuant to the Fresno County Solar Facility Guidelines, the project proponent for each individual solar/BESS project would be required to record such a notice prior to the County's issuance of permits for the project.

Westlands Water District

The District's Rules and Regulations include several provisions regarding water supply for farmlands that are repurposed for a modified use such as solar generation facilities.

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Rules and Regulations – Article 2 – Surface Water Allocation - Appendix A

This section of the District’s Rules and Regulations applies to CVP contractual and legal entitlements and provides for the “temporary, albeit long-term, modification” of “Eligible Cropland” (i.e., eligible to receive surface water deliveries) to a non-irrigable use (e.g., solar generation facility) if a conditional use permit is obtained for such use, and the term of the land use is limited by the permitting agency and by a lease or easement on the land, and that upon cessation of such use, the facility will be decommissioned and returned to a condition suitable for agricultural use, as guaranteed through the posting of a performance bond or other financial assurance (WWD 2023a). These provisions allow for the privately owned DFA lands to retain their eligibility for CVP allocation subject to the condition that the subject lands will remain suitable for agricultural use after the solar and related facilities are removed from the lands.

Rules and Regulations – Article 1 – Groundwater Allocation

Subject to annual groundwater allocations as determined by the District under the Groundwater Sustainability Plan (GSP), and other conditions set forth in Article 1, landowners may transfer groundwater to other Eligible Land within the District. Thus, most VCIP solar and energy storage projects would be eligible for groundwater supplies, except for those projects located on reconveyed District land. In 2030 and subsequent years, the annual groundwater allocation will be limited to 0.6 acre-feet per acre per year on privately owned lands, which reflects the long-term sustainable yield within the Westside Subbasin (2024a).

AB 2661 – VCIP

As described under “State” above, AB 2661 authorizes the District to construct, operate, and maintain solar generation facilities, energy storage systems, and electrical transmission lines within its boundaries. The bill requires the District to establish a community benefits agreement plan for the Valley Clean Infrastructure Plan and related projects (Water Code sections 37860-37861). Pursuant to Bill 2661, the District is considering the proposed VCIP as the policy and planning framework for incremental repurposing and management of drainage-impaired and other private and District-owned lands within the District’s boundaries through proposals by GSCE to develop clean energy generation, storage, transmission, and other ancillary and supportive uses.

4.11.3. Environmental Impact Analysis**METHODOLOGY**

This section analyzes the potential for implementation of the proposed VCIP to result in significant impacts on the physical environment related to land use and planning, based on a review of applicable general plans, airport land use plans, zoning ordinances and maps, development guidelines, and other relevant documents. The proposed VCIP Energy Resource and Infrastructure Plans were considered in the context of existing land uses in the Plan Area and evaluated for consistency with applicable land use plans, policies, and regulations.

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SIGNIFICANCE CRITERIA

Based on Appendix G of the state CEQA Guidelines, implementation of the VCIP would be considered to result in a potentially significant impact related to land use and planning impact if it would:

- a. Physically divide an established community.
- b. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

4.11.3.1. DIRECT AND INDIRECT EFFECTS

Impact LU-1. Physically Divide an Established Community

Implementation of the VCIP Energy Resource and Infrastructure Plans would not physically divide an established community. (No Impact)

Four incorporated cities and one military base are located adjacent to the Plan Area, and several unincorporated communities are located within the Plan Area (see Figures 3.1-1 through 3.1-8 in Chapter 3. *Environmental Setting*). The adjacent cities include Mendota, Huron, Coalinga, and Avenal. Regarding Mendota, the nearest DFAs and transmission corridor would be located on rural land west of the City's urban limits. The City of Huron is not within the Plan Area but is surrounded by it, although no VCIP energy or infrastructure projects are contemplated in the vicinity of Huron. The City of Avenal's northern municipal boundary is adjacent to the Plan Area although its urbanized area is located several miles to the south across the Kettleman Hills. The westernmost portion of NAS Lemoore is within the Plan Area, although the built-up portions of the base, including the base housing, are located 2.5 miles east of the Plan Area in Kings County. Therefore, VCIP implementation would not physically divide the incorporated cities in the vicinity of the Plan Area.

Several unincorporated communities in the Plan Area could have DFAs or portions of the planned connecting transmission corridor located nearby. The community of Cantua Creek could have potential solar/BESS projects located within DFAs to the west, north, east, and southeast of the residential community and Cantua Elementary School. No transmission corridors or collector substations are planned in the vicinity, although a project gen-tie line would likely run north-south along S. Stanislaus Avenue approximately 0.25 miles west of the residential community. Thus, there are no VCIP elements that would physically divide the Cantua Creek community.

The community of Three Rocks/El Porvenir would have potential solar/BESS projects located in the southeast quadrant of SR-33/W. Clarkson Avenue on the opposite side of SR-33 from the community. There would be no other VCIP elements in the vicinity. Therefore, VCIP implementation would not physically divide the community of Three Rocks/El Porvenir.

The community of Five Points would have no VCIP facilities located within or adjacent to the community, although a DFA and a collector substation would be located one mile to the west, and the connecting transmission corridor would run north-south approximately 0.6 miles west of the community. Therefore, VCIP implementation would not physically divide the community of Five Points.

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The community of Westside/O'Neill would have no VCIP facilities located within or adjacent to the community, with the nearest DFA located 1.5 miles south. The connecting transmission corridor would run north-south approximately 1.4 miles east of the community. Therefore, VCIP implementation would not physically divide the community of Westside.

Several other smaller clusters of rural housing located within the Plan Area are named places, but may not constitute rural communities as defined. These places include Giffen Cantua Ranch, Pilibos Ranch, and Calflax/WSREC. In all three cases, the nearest DFAs would be 0.3 to 1.0 miles away. At Calflax, the connecting transmission corridor would run east-west approximately 500 feet north of the residential community at the WSREC. Therefore, VCIP implementation would not physically divide these places.

In summary, implementation of the VCIP Energy Resource and Infrastructure Plans would not divide any established communities within or near the Plan Area, including incorporated cities, unincorporated communities, and other named places with clusters of rural dwellings. Therefore, VCIP implementation would have *no impact* in this regard.

Mitigation Measures: No mitigation is required.

Impact LU-2. Conflict with any Adopted Land Use Plan, Policy, or Regulation

The VCIP Energy Resource and Infrastructure Plans are consistent with all applicable land use plans, policies, and regulations adopted for the purpose of avoiding or mitigating an environmental effect; therefore, implementation of the proposed VCIP would not conflict with such land use plans, policies, or regulations. (No Impact).

Fresno County General Plan

The Fresno County General Plan (General Plan) land use designation applicable to the entire VCIP Plan Area is "Agriculture." The general types of land uses allowed by right on lands under the Agriculture designation are enumerated in General Plan Table LU-1 which states: "[t]his designation provides for the production of crops and livestock, and for location of necessary agriculture commercial centers, agricultural processing facilities, and certain nonagricultural activities" (Fresno County 2024b). Rather than being allowed by right (i.e., subject to non-discretionary or ministerial approvals), the County allows the development of solar generating and storage facilities through a discretionary conditional use permit approval process. Consistent with the Fresno County General Plan, the Fresno County Board of Supervisors has adopted zoning ordinances and guidelines that allow the development of these facilities on agricultural lands in the County.

The Fresno County Solar Facility Guidelines were originally adopted by the Board of Supervisors in 2013 and updated in 2017. The preamble to the Guidelines states:

The need to accommodate new renewable energy technology must be balanced with the need to protect important farmlands and minimize impacts to existing agricultural operations. The land use process for evaluating solar facilities should rely on general guidelines and policies rather than specific

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standards, which may not be flexible enough to accommodate the evolving technology (Fresno County 2017b).

Applicants for proposed solar projects are required to address each of the Guidelines and submit an analysis of project consistency with the Guidelines with the CUP applications for their solar projects. The County's Solar Facility Guidelines are addressed further, later in this section.

The consistency of VCIP implementation with the General Plan's relevant Land Use Goals and Policies is discussed below.

Goal LU-A: To promote the long-term conservation of productive and potentially productive agricultural lands and to accommodate agricultural support services and agriculturally related activities that support the viability of agriculture and further the County's economic development goals.

Consistent. In furtherance of Goal LU-A, a fundamental purpose of the proposed VCIP is to constructively address the chronic shortage of surface water deliveries by promoting temporary repurposing of farmland to facilitate the redirection of scarce surface water and groundwater allocations to other productive agricultural land within the District. As described in Section 4.2 *Agriculture and Forestry Resources*, the proposed DFAs are designed to enhance the productivity within the overall farming units within the District. This proposed management decision to authorize long-term but temporary repurposing of these lands is driven by the increasing quantity of fallowed acreage due to constrained irrigation water supplies. The District's Rules and Regulations provide that agricultural lands modified to a non-irrigable use (temporary but long term) retain their eligibility for water supply, subject to specified conditions. These conditions include a requirement that the subject lands either retain their existing agricultural character during the operational life of the project or, upon cessation of project uses, the project will be decommissioned and the land will be returned to a condition suitable for agricultural uses. The agricultural soils would undergo minimal disturbance by the solar uses and would be restored to a condition suitable for farming upon decommissioning. Thus, the VCIP facilities would represent temporary repurposing of farmland, and would not result in its permanent conversion of non-agricultural use.

Another objective of the VCIP is to locate potential solar projects on farmland that has been fallowed or removed from irrigated agriculture. This would reduce pressure to develop renewable energy on more productive agricultural land elsewhere in the County. The 72,000 acres of District-owned land identified in the contemplated DFAs have been retired from irrigated agriculture. Much of the other lands included within the proposed DFAs have been designated by the District as priority land for retirement due to physical impairments such as perched groundwater, high salinity, prone to subsidence, and generally low fertility which renders the land less suitable for most crops and results in low yields.

In sum, the proposed VCIP is consistent with Goal LU-A and is designed to support the viability of agriculture within the District's service area and further the County's economic development goals.

Policy LU-A.1: Agricultural Land Conservation. The County shall maintain agriculturally-designated areas for agriculture use and shall direct urban growth away from valuable agricultural lands to cities, unincorporated communities, and other areas planned for such development where public facilities and infrastructure are available and can be provided consistent with the adopted General or Community Plan.

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Consistent. The VCIP does not include commercial or residential land uses which are generally associated with urban growth. In addition, clean energy development does not require urban infrastructure such as permanent roads, sewers and urban water systems. Renewable energy projects such as PV solar facilities are designed to be temporary and are required to be decommissioned at the end of their useful lives and with the soil to be reclaimed to a farmable condition. For each VCIP solar and BESS project, a Vegetation and Soil Management Plan (VSMP) would be required as specified in Mitigation Measure AG-1, “Protection of Long-Term Agricultural Land Capability.” The preparation and implementation of the VSMP throughout the operational life of the solar/BESS facilities would ensure that onsite vegetation would be installed and maintained in a manner that would maintain soil health during the time the land is repurposed. (For further detail, see discussion under Policy LU-A.23 below.)

Policy LU-A.3: Special Agricultural Uses. The County may allow by discretionary permit in areas designated Agriculture, special agricultural uses and agriculturally-related activities, including value-added processing facilities, and certain non-agricultural uses. Approval of these and similar uses in areas designated Agriculture shall be subject to the following criteria:

- a. The use shall provide a needed service to the surrounding agricultural area which cannot be provided more efficiently within urban areas or which requires location in a non-urban area because of unusual site requirements or operational characteristics;
- b. The use should not be sited on productive agricultural lands if less productive land is available in the vicinity;
- c. The operational or physical characteristics of the use shall not have a detrimental impact on water resources or the use or management of surrounding properties within at least one-quarter (1/4) mile radius;
- d. A probable workforce should be located nearby or be readily available;

Consistent: This policy mainly applies to agriculture-related uses, and sets forth criteria for permitting such uses in areas designated Agriculture. The approval of proposed VCIP solar facilities would not be subject to these criteria but would be subject to the solar-specific criteria contained in the County’s Solar Facility Guidelines. Nevertheless, the VCIP would satisfy the relevant criteria. First, the proposed VCIP facilities would provide needed service to the surrounding agricultural farming units by (1) facilitating the redirection of scarce surface water and groundwater allocations to other productive land within the District; and (2) facilitating SGMA implementation. These environmental benefits provided by the VCIP to sustain the overall farming units (1) cannot be provided within urban areas, because this would not facilitate the redirection of scarce surface water or groundwater allocations to other productive agricultural land; (2) require location within the Plan Area where the District conveys its CVP contract water supply and implements groundwater sustainability management actions pursuant to the GSP; and (3) would most effectively be provided through the DFAs because the majority of the proposed DFA lands are designed to utilize lands which have been fallowed or removed from irrigated agriculture.

Second, the majority of the proposed DFA lands would consist of farmland that has been fallowed or removed from irrigated agriculture due to lack of surface water and groundwater supply to promote farming on other productive lands within the overall farming units. Third, as demonstrated in Section 4.10. *Hydrology and Water Quality* and Section 4.17. *Utilities and Service Systems*, the VCIP would not have a detrimental impact on water resources. In fact, it would result in environmental benefits related to water supply and facilitate SGMA implementation. Fourth, a probable workforce for the

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proposed VCIP is located nearby and would be readily available. In addition, the County's Solar Facility Guidelines require a reasonable effort to hire locally, which is also a project objective of the VCIP.

Policy LU-A.13: Agricultural Buffers. The County shall protect agricultural operations from conflicts with nonagricultural uses by requiring buffers between proposed non-agricultural uses and adjacent agricultural operations. Additionally, the County shall consider buffers between agricultural uses and proposed sensitive receptors when processing discretionary land use applications.

Consistent. As required by Fresno County, VCIP implementation would include minimum setbacks of 50 feet from neighboring agricultural lands. As specified in MM AES-1 in this PEIR, VCIP implementation would also include minimum setbacks of 50 feet from neighboring residential properties.

Policy LU-A.14: Agricultural Land Conversion Review. The County shall ensure that the review of discretionary permits includes an assessment of the conversion of productive agricultural land and that mitigation be required where appropriate.

Consistent. VCIP implementation would involve the temporary repurposing of farmland, the majority of which is subject to irrigation water constraints. The solar use of these farmlands would be limited in duration and would not impair the future productivity of the repurposed lands as the proposed VCIP projects would be decommissioned upon the end of their useful life and the land reclaimed. Therefore, the farmlands would not be subject to permanent conversion to non-agricultural uses, and mitigation would be required where appropriate. (See Section 4.2. *Agriculture and Forestry Resources* for a full discussion.)

Policy LU-A.15: Right-to-Farm Notice. The County shall generally condition discretionary permits for development within or adjacent to agricultural areas upon the recording of a Right-to-Farm Notice, which is an acknowledgment that residents in the area should be prepared to accept the inconveniences and discomfort associated with normal farming activities and that an established agricultural operation shall not be considered a nuisance due to changes in the surrounding area.

Consistent. All VCIP projects would record a Right-to-Farm Notice as required.

Policy LU-A.23: Farmland Conversion. For discretionary land use projects that are not directly related to or supportive of agricultural uses and which propose the permanent conversion of twenty acres or more of Prime Farmland, Unique Farmland or Farmland of Statewide Importance (as designated by the Farmland Mapping and Monitoring Program) to nonagricultural uses, the County shall consider and adopt feasible measures including, but not limited to:

- Acquisition of conservation easements at a 1:1 ratio for lands lost to nonagricultural uses.
- Fee title of agricultural mitigation land that may be held by a third party or the County.
- In lieu fees paid to the County that may be used to acquire future mitigation property.
- Mitigation banks.

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The County may exempt projects from agricultural mitigation requirements when it has been determined that conversion is occurring pursuant to a local groundwater sustainability plan, or the project is for housing which is predominately for persons of low or moderate income as defined in section 50093 of the Health and Safety Code. Further, the County may exempt discretionary land use projects from agricultural mitigation requirements if it finds that the loss of agricultural land caused by the proposed conversion is outweighed by specific overriding economic, legal, social, technological, or other benefits of the conversion, as contemplated by section 21081(b) of the Public Resources Code (Fresno County 2024b).

Consistent. VCIP implementation would involve the temporary, albeit long-term, repurposing of farmland subject to general irrigation water constraints. The solar use of these farmlands would be limited in duration and would not be expected to impair the future productivity of the repurposed lands as the proposed VCIP projects would be decommissioned at the end of their useful life and the land reclaimed. This is discussed in further detail below and in Section 4.2. *Agriculture and Forestry Resources*. In total, implementation of the entire VCIP would result in the permanent conversion of 60 acres of Farmland associated with the construction of Substation 5.

Background

The total land area subject to potential long-term temporary repurposing under the VCIP is approximately 136,000 acres. Of this total, approximately 69,000 acres are currently mapped as Prime Farmland, Unique Farmland or Farmland of Statewide Importance (Farmland) by the FMMP, of which approximately 5,000 acres is District-owned land. The remaining 67,000 acres is mapped as Non-Farmland, almost all of which consists of District-owned land.

Temporary, Albeit Long-Term Repurposing of Farmland

The repurposing of agricultural land for solar and related uses for a limited period of time would not be expected to result in the permanent or temporary loss of farmland. Restrictions on availability of irrigation water supply have necessitated the fallowing of an average of 189,640 acres of land in the District over the last ten years (2015-2024). Thus, under baseline conditions it is not feasible to irrigate all Farmland within the Plan Area each year, with substantially more fallowed within the District than the total DFAs (136,000 acres in DFAs compared to 189,640 acres fallowed). The restrictions on water supply are expected to worsen over the short term as limitations on groundwater pumping take full effect under SGMA. The District's water supply objectives for the VCIP are to enable the effective implementation of the GSP while maintaining the viability of agricultural operations by providing for temporary modification of agricultural lands. The VCIP is intended to address the chronic shortage of CVP contract water and other non-CVP water deliveries by promoting repurposing of farmland to facilitate the redirection of scarce allocations of this water to other productive land within the District. Under Article 1 and Article 2, Appendix A of the District's Rules and Regulations, the surface and groundwater allocations applicable to the modified agricultural lands are permitted to be transferred to the portions of the farming units to be retained in agricultural production, thereby enhancing the productivity and viability of the larger farming units. Allowing the transfer of water from modified lands to other productive agricultural lands would help reduce overall fallowing acreage and minimize the amount of land that would be economically unproductive in the absence of the VCIP.

The temporary repurposing of agricultural land under the VCIP, alongside the transfer of water from modified lands to other productive agricultural lands would create an orderly framework for significant

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fallowing that has and will continue to occur. The VCIP's coordinated approach would minimize the amount of land that would be economically unproductive in the absence of the VCIP. Rather than the proximate cause of fallowing, the proposed VCIP is an adaptive approach that would contribute to the solution of how to manage reduced water supply reliability and the substantial amount of fallowing that must occur in any given year. In sum, the District's objective is to maintain the viability of the overall farming units through temporary repurposing of farmland, which would be subject to long-term fallowing in any event. For these reasons, implementation of the VCIP would ultimately be environmentally beneficial and protect agricultural resources within the Plan Area.

Limited Duration of Repurposing of Farmland

The solar and energy storage use of the DFA lands would be limited by the predicted useful life (and lease/easement terms) of these facilities, which is anticipated to be 35 years. Upon decommissioning, the lands would be restored to pre-project conditions through implementation of a County-approved Reclamation Plan, which would be guaranteed by the posting of performance bonds or other forms of financial surety. The conditional use permits issued by the County for solar and energy storage projects would be temporary and would expire upon termination of the solar lease, with the termination date to be specified in the Reclamation Plan. This reflects the County's objective that the solar and energy storage uses will be temporary, albeit long term, in nature.

The long-term temporary duration of the solar use is also reflected in the type of land transactions that would be required with participating landowners in the VCIP. Instead of having the solar developers purchase privately owned land in fee simple, the DFA lands would be subject to leases or long-term easements for solar use, for a term of 35 years, with the explicit provision that these leases/easements would be extinguished upon decommissioning of the solar facilities, with all land rights reverting to the underlying landowner. Modification of these agricultural lands for solar and related facilities represents a management decision for certain agricultural lands within the overall farming unit(s). The farming unit remains intact because the management or fallowing decision enhances the productivity of the overall ongoing agricultural use.

Recognition that the solar and energy storage facilities would be temporary, albeit long-term, in nature is further reflected in the District's Rules and Regulations which provide that privately owned agricultural lands modified to a non-irrigable use may retain their eligibility for water supply (i.e., for onsite use and/or for transfer to other agricultural lands in the District) subject to specified conditions, including a requirement that the subject lands either retain their existing agricultural character during the operational life of the project or, upon cessation of project uses will be returned to a condition suitable for agricultural use. Such water transfers are not permitted unless projects proposed on the privately owned modified lands are subject to use permits with a defined expiration date, and have approved Decommissioning Plans backed by financial assurances. Thus both the District and the County have established mechanisms and measures to ensure that the temporary repurposing of agricultural lands would not significantly compromise their long-term productive agricultural capability.

Preservation of Agricultural Capability of Farmlands during Temporary Repurposing

An objective of the proposed VCIP is also to ensure financing of decommissioning and site reclamation at the end of each project's life to restore each site to conditions suitable for agricultural use. This

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objective would enable the entire farming units to return to agricultural production in the future. As such, it is imperative that the physical properties of the soils on the temporarily repurposed lands are preserved to conserve the agricultural capability of those lands. Construction of the solar and energy storage facilities would involve minimal grading, with 90 percent of each project site occupied by elevated solar arrays and the ground beneath maintained in vegetative cover. The risk of soil contamination during construction and operation of solar and energy storage facilities would be minimized through implementation of the hazardous materials provisions of the required Storm Water Pollution Prevention Plans (SWPPPs) and Hazardous Materials Business Plans (HMMPs). For each VCIP solar and BESS project, a Vegetation and Soil Management Plan (VSMP) would be required as specified in Mitigation Measure AG-1. Protection of Long-Term Agricultural Land Capability. The preparation and implementation of the VSMP throughout the operational life of the solar/BESS facilities would ensure that onsite vegetation would be installed and maintained in a manner that would maintain soil health for the life of the facilities. Also, implementation of approved Pest Management Plans during operation and maintenance of the facilities would prevent the emergence and spread of weeds while minimizing the use of herbicides and pesticides. Decommissioning would involve the removal of all structural elements of the facilities, including concrete pads and foundations, and surface material for internal driveways. The required implementation of SWPPPs during decommissioning would minimize the risk of soil contamination during that final project phase. After the structural elements of a facility have been removed, the limited areas subject to excavation for foundations would be refilled with native soils, and areas subject to compaction for internal driveways would be mixed and loosened. The entire site would be tilled to restore the pre-project agricultural soil texture and density. Overall, these lands would be managed to maintain their agricultural capability and to prevent their permanent conversion to non-agricultural use.

Conclusion

In sum, the temporary (though long-term) repurposing of Farmland for VCIP solar and energy storage facilities would not be expected to adversely affect any of the physical and environmental characteristics of the project sites that qualify them for mapping as Prime Farmland, Farmland of Statewide Importance, or Unique Farmland under CDOC's Farmland Mapping and Monitoring Program. While the temporary repurposing of Farmland contribute to the temporary remapping of these lands by FMMP to a Non-Farmland, once these lands are returned to agricultural use upon decommissioning and reclamation, these lands would be remapped as Farmlands by FMMP.³ The solar and energy storage projects would have a finite life of 35 years and would not alter the physical and chemical properties of the agricultural soils. Further, they would be subject to requirements ensuring that the existing physical character of the soil would be retained during the operational life of the project. Upon cessation of project uses, the land would be restored to a condition suitable for agricultural uses. As such, these facilities would not affect the long-term suitability of their sites for agricultural uses. Therefore, implementation of the proposed VCIP would not result in the permanent conversion of "Farmland" to non-agricultural uses. This is discussed in further detail in Section 4.2. *Agriculture and Forestry Resources.*

³ Under existing conditions, it is not feasible to irrigate and cultivate all farmland. Background effects such as SGMA implementation and climate change are expected to exacerbate the existing chronic shortage of surface water supply and further reduce water supply reliability. Therefore, to the extent any farmland is remapped due to extended fallowing, these existing conditions and known trends suggest this fallowing would likely occur without implementation of the VCIP. {00080664.1}

In addition, the solar and related uses of the repurposed lands would provide for the effective stewardship of their agricultural capability during the interim period when the lands are put to alternative productive use. In particular, a Vegetation and Soil Management Plan (VSMP) would be required for each solar/BESS project as specified in Mitigation Measure AG-1, “Protection of Long-Term Agricultural Land Capability.” The preparation and implementation of the VSMP throughout the operational life of the solar/BESS facilities would ensure that onsite vegetation would be installed and maintained in a manner that would maintain soil health for the life of the facilities. As such, while the repurposed lands would temporarily be taken out of agricultural production, the lands would be managed to maintain their agricultural capability and to prevent their permanent conversion to non-agricultural use.

While the implementation of VCIP solar and related projects would result in the temporary use of farmland for the production of renewable energy, it would also fulfill the basic objectives of the District and the farming community of effectively implementing the GSP while managing the land to preserve its long-term agricultural capability. Therefore, the temporary repurposing of the farmland would ensure its long-term conservation for the future resumption of agricultural production, and the temporary solar land use would preserve the agricultural capability of the soil. Thus, while the repurposing of the land would temporarily remove it from agricultural production, it would not commit the land to permanent conversion to non-agricultural uses. In fact, the VCIP would accomplish the opposite by committing the land to be preserved for future resumption of agricultural use.

Applicability of Fresno County’s Agricultural Mitigation Exemption

Under General Plan Land Use Policy LU-A.23 “the County may exempt projects from agricultural mitigation requirements when it has been determined that conversion is occurring pursuant to a local groundwater sustainability plan.” Policy LU-A.23 further provides that “the County may exempt discretionary land use projects from agricultural mitigation requirements if it finds that the loss of agricultural land caused by the proposed conversion is outweighed by specific overriding economic, legal, social, technological, or other benefits of the conversion, as contemplated by section 21081(b) of the Public Resources Code.” This policy recognizes that potential impacts to agricultural lands should be balanced against the substantial benefits associated with promoting groundwater sustainability pursuant to a GSP and any other potentially overriding benefits associated with a project. As discussed in further detail in Section 4.2. *Agriculture and Forestry Resources*, application of the exemption is a policy matter to be determined at the project level and cannot be assessed in this PEIR.

Other General Plan policies applicable to implementation of the proposed VCIP 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 PEIR where those environmental topics are addressed, including Section 4.2. *Agriculture & Forestry*, Section 4.3. *Air Quality*, Section 4.4. *Biological Resources*, Section 4.9. *Hazards & Hazardous Materials*, Section 4.13. *Noise*, and Section 4.15. *Public Services*. The County’s project-level review will also evaluate individual VCIP projects evaluated for consistency with applicable General Plan policies.

Fresno County Solar Facility Guidelines

Applicants for proposed solar/BESS projects in Agriculture-designated areas are subject to the Fresno County Solar Facility Guidelines and are required to submit an analysis of project consistency with the Guidelines with {00080664.1}

the CUP applications for their solar projects. Each of the Solar Facility Guidelines and policies is briefly summarized below, along with a discussion of the potential for VCIP projects to be consistent with each Guideline.

1. Information shall be submitted regarding the historical agricultural operational/usage of the parcel, including specific crop type and crop yield, for the last ten years (if no agricultural operation in the last ten years, specify when land was last in agricultural use).

Consistent: Each VCIP project proponent would submit historical information on the agricultural operation on each proposed project parcel as part of the application for the land use permit for the proposed project.

2. Information shall be submitted that identifies the source of water for the subject parcel (surface water from irrigation district, individual well(s), conjunctive system). If the source of water is via district delivery, the applicant shall submit information documenting the allocations received from the irrigation district and the actual disposition of the water (i.e. utilized on-site or moved to other locations) for the last ten years. If an individual well system is used, provide production capacity of each well, water quality data and data regarding the existing water table depth.

Consistent: Each VCIP project proponent would submit current and historical information on the source and usage of agricultural water for each proposed project parcel as part of the application for the land use permit for the proposed project.

3. Identify the current status of the parcel (Williamson Act Contract, Conservation Easement, retired land, etc.), the purpose of any easement and limitations of the parcel. The applicant shall submit a Title Report or Lot Book Guarantee for verification.

Consistent: Each VCIP project proponent would submit detailed property information on each proposed project parcel, including status of any Williamson Act contracts, easements, and other limitations, as part of the application for the land use permit for the proposed project.

4. Identify (with supporting data) the current soil type and mapping units of the parcel pursuant to the standards of the California State Department of Conservation and the Natural Resources Conservation Service.

Consistent: Each VCIP project proponent would submit detailed soil information, with supporting data and documentation, on each proposed project parcel as part of the application for the land use permit for the proposed project.

5. List all proposed measures and improvements intended to create a buffer between the proposed solar facility and adjacent agricultural operations (detailed information must be shown on Site Plan) and provide factual/technical data supporting the effectiveness of said proposed buffering measures.

Consistent: As part of the land use permit application submittal for each VCIP project, the project proponent would submit site plans for the proposed project which show the proposed buffers from adjacent agricultural operations, along with supporting data and analysis supporting the effectiveness of the proposed buffering measures.

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6. Provide a Reclamation Plan detailing the lease life, timeline for removal of the improvements and specific measures to return the site to the agricultural capability prior to installation of solar improvements. If the project is approved, adequate financial security to the satisfaction of the County shall be submitted to ensure site reclamation.

Consistent: As part of the land use permit application submittal for each VCIP project, each project proponent would submit a Reclamation Plan prepared in accordance with the County's "Guidelines for Preparing a Solar Electrical Generation Facility Reclamation Plan." Prior to issuance of grading and building permits for project construction, an Engineering Cost Estimate for implementation of the plan would be submitted to the County for review and approval. Upon approval, the project proponent would submit financial assurance to ensure implementation of the Reclamation Plan upon decommissioning of the solar facility.

7. Provide information documenting efforts to locate the proposed solar facility on non-agricultural lands and non-contracted parcels and detailed information explaining why the subject site was selected.

Consistent: Each VCIP project proponent would submit detailed information explaining and documenting efforts to locate the proposed project on non-agricultural lands and non-contracted lands and detailed information explaining why the proposed project site was selected, as part of the application for the land use permit for the proposed project.

8. Develop and submit a project site Pest Management Plan to identify methods and frequency to manage weeds, insects, disease and vertebrate pests that may impact adjacent sites.

Consistent: As part of the application for the land use permit for the proposed project, the project proponent would submit a Pest Management Plan (PMP) that includes prescriptive pest management measures to be implemented prior to site development and during operation of the proposed project.

9. The applicant must acknowledge the County's Right to Farm Ordinance and shall be required to record a Right to Farm Notice prior to issuance of any permits. This shall be included as a recommended Condition of Approval of the land use entitlement.

Consistent: Each VCIP project proponent would record a Right-to-Farm Notice prior to the issuance of grading and building permits for the proposed project.

10. Note: The life of the approved land use permit will expire upon expiration of the initial life of the solar lease. If the solar lease is to be extended, approval of new land use permit will need to be obtained.

Consistent: The Reclamation Plan submitted by each project proponent would specify the lease life and termination date of the lease.

11. If the project is approved, the applicant shall make all reasonable efforts to establish a point of sale in Fresno County for equipment and construction related items necessary for the project.

Consistent: It is a project objective of the VCIP that materials be procured locally, and for materials that are not locally available, that procurement of materials sourced from outside the area be procured through a local point of sale. Under Water Code section 37861 (AB 2661 – 2024), the District is required to establish a community benefits agreement plan that includes use of local businesses and

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vendors. Each VCIP project proponent would be required to use local businesses and vendors under the VCIP community benefits plan.

12. If the project is approved, the applicant shall make all reasonable efforts to conduct local recruitment efforts and/or coordinate with employment agencies in an attempt to hire from the local workforce.

Consistent: It is a project objective of VCIP that construction and operational workers for VCIP projects and facilities be recruited locally. Under Water Code section 37861 (AB 2661 – 2024), the District is required to establish a community benefits agreement plan that includes job creation and training programs for local residents. Each VCIP project proponent would be required to participate in job creation and training programs for local residents under the VCIP community benefits plan.

13. In addition to disclosing the number of trips in the required Operational Statement, the applicant shall disclose the weight of the shipments anticipated to the site. If the project is approved, pursuant to the CEQA analysis and based on existing road conditions and the weight/frequency of shipments to the site, the applicant shall mitigate impacts to County roads.

Consistent: Each VCIP project proponent would submit an Operational Statement with the land use application that includes estimates of all vehicular trips generated by project construction, including commute trips by construction workers, and haul trips for materials and equipment to be utilized in project construction. This would include a breakdown of estimated truck deliveries during construction, by truck weight class. The Traffic Impact Study to be prepared for each proposed VCIP project would utilize the information on truck weight class to evaluate impacts to and identify mitigation measures for the pavement on roadways used by the construction delivery trucks.

14. If the project is approved, the applicant shall make all reasonable efforts to purchase products and equipment from local (Fresno County) manufacturing facilities and/or vendors.

Consistent: It is a project objective of the VCIP that materials be procured locally. Under Water Code section 37861 (AB 2661 – 2024), the District is required to establish a community benefits agreement plan that includes use of local businesses and vendors. Each VCIP project proponent would be required to use local businesses and vendors under the VCIP community benefits plan.

Compliance with most of the above guidelines involves submitting site-specific information, which is highly variable depending on the circumstances of each proposed project (e.g., Guidelines 1-4, historical use, water source, Williamson Act status, soil types, respectively). Guidelines 5, 7, and 13 involve analytical responses based on conditions unique to each project (i.e., agricultural buffers, site selection factors, and roadway impacts, respectively). It is expected that individual project proponents would submit the required information at the project-specific stage. The remaining items mainly relate to policies and requirements applicable to all projects (e.g., Guidelines 6, 8-12, 14, Reclamation Plan, Pest Management Plan, Right-to-Farm Notice, use permit expiration, point-of-sale, local purchasing, and hiring, respectively). As shown in the above consistency discussions for each Guideline, it is expected that VCIP solar/BESS projects would meet all the applicable land use permit criteria and would comply with the applicable policies and requirements of the guidelines.

As discussed above, Water Code section 37861 requires the District to establish a community benefits agreement plan for the VCIP. The community benefits plan must outline specific benefits, including job creation and training programs for local residents and the use of local businesses and vendors. Consequently, {00080664.1}

if the VCIP is approved, its community benefits plan will ensure that reasonable efforts are made to establish a point of sale in Fresno County, hire locally, and to purchase necessary materials from local vendors.

In summary, the VCIP solar/BESS projects would need to be found to be consistent with the applicable General Plan designations and policies to receive project approval from the County. At this plan level of analysis, it is concluded that VCIP solar projects would be found to be consistent with Fresno County Solar Facility Guidelines for conditional use permits for solar projects.

Zoning

As shown on the Fresno County Zoning Map, most of the Plan Area is zoned “Exclusive Agricultural, 20-acre minimum parcel size (AE-20).” The western portions of the Plan Area along I-5 and the southeastern portions of the Plan Area near NAS Lemoore are zoned “Exclusive Agricultural, 40-acre minimum parcel size (AE-40).” The only areas with non-agricultural zoning are in the unincorporated communities of Cantua Creek, Three Rocks (El Porvenir), and Five Points. Portions of Three Rocks/El Porvenir, Five Points, and Westside are zoned AC - Agricultural Commercial Center (Fresno County 2025b). Under Fresno County Zoning Ordinance section 842.5.020.B., PV solar and BESS facility projects are permitted through the UCUP process pursuant to section 842.5.020.B.14, which pertains to “[p]ower production, storage and generation facilities (includes utility-scale photovoltaic facilities subject to the County’s adopted Solar Facility Guidelines, wind farms and hydroelectric facilities subject to County jurisdiction), including without limitation any associated facilities for the storage or transmission of electrical energy” (Fresno County 2024j). All potential VCIP PV generation and BESS facilities would be consistent with the County’s Zoning Code.

The VCIP infrastructure projects (gen-tie lines, substations, transmission lines) would be permitted in the AE zones under the category “Public Utility Facilities” which are potentially subject to the granting of a Conditional Use Permit. Under Zoning Ordinance Article 7, the definition of “Public utility facilities” includes “[f]ixed base structures for the collection, distribution, maintenance, transmission . . . and includes facilities for generation or storage of electricity . . . ‘public utility facility’ shall include, without limitation, facilities for the storage or transmission of electrical energy, owned or operated by a ‘local agency,’ as defined in section 53090 of the Government Code.” Additionally, “Public utility facilities, major” include “[e]lectrical distribution and transmission substations and switching stations” (Fresno County 2024j). All potential VCIP infrastructure is permitted in the County’s Agricultural zones and would therefore be consistent with the County’s Zoning Code.

As discussed in Section 4.11.2. *Regulatory Context*, Fresno County Zoning Ordinance section 804.1.030 – *Exemptions from Land Use Permit Requirements* – states that the land use permit requirements of the Zoning Ordinance do not apply to “Governmental activities,” which are defined as “[a]ny land use activities conducted by a City, County, State or an agency of the State, or the Federal government on land owned or leased by the governmental agency (Zoning Ordinance Section 804.1.030 (B)(3)). The exemption applies provided that “the activity or use is established and operated in compliance with applicable development standards” in the Zoning Ordinance, and that “permits and approvals required by other regulations,” if required, are obtained in compliance with the Zoning Ordinance (Zoning Ordinance Section 804.1.030 (A)(1 and 2))(Fresno County 2024a). The District would implement the proposed VCIP pursuant to its authorized governmental activities. Therefore, if the VCIP implements the proposed VCIP on lands owned or leased by the District, then any facilities constructed (e.g., solar/BESS facilities, and infrastructure such as substations, transmission lines and gen-tie lines) would be exempt from the Zoning Ordinance’s land use permit requirements provided the County’s general requirements for exemption set forth in section 804.1.030(A) are satisfied.

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It is expected that County review of proposed VCIP projects, as required by the Zoning Ordinance, would ensure that any other applicable zoning standards would be adhered to and that appropriate conditions of approval would be required and implemented. As such, the development of VCIP projects would be consistent with the Fresno County Zoning Ordinance, and thus would have *no impact* with respect to zoning consistency.

Fresno County Airport Land Use Compatibility Plan (ALUCP)

The ALUCP contains a land use compatibility plan for each of the nine public use airports in Fresno County, which forms the basis for the ALUC's review of local agency land use actions for consistency with the land use compatibility policies and criteria of the ALUCP (Fresno COG 2023). There are four public use airports within or adjacent to the Plan Area. These include the Robert William Johnston Municipal Airport in Mendota, the New Coalinga Municipal Airport, the Harris Ranch Airport, and the Firebaugh Airport. Although the Plan Area includes portions of the Airport Influence Areas (AIAs) of all four airports, none of the VCIP DFAs or infrastructure elements would be within any of the airport AIAs. Therefore, implementation of proposed VCIP projects would not conflict with the Fresno County ALUCP. (See also Section 4.9. *Hazards and Hazardous Materials* for detailed discussion of the ALUCP.)

NAS Lemoore Joint Land Use Study

The military airfield at NAS Lemoore is in Kings County adjacent to the southeastern boundary of the Plan Area. The nearby portions of the Plan Area are included in the MIA of NAS Lemoore, and are within the study area of the NAS Lemoore JLUS. The JLUS has no jurisdictional effect on the VCIP, but includes relevant information regarding potential safety hazards posed by NAS Lemoore operations upon the potential VCIP projects. The nearest VCIP DFAs would be located 0.7 to 2.0 miles west and southwest of the NAS Lemoore airfield. The height restriction zones for flight operations at the airfield extend west about 8.0 miles from the airfield to SR-269. Most of the DFAs that would be located east of SR-269 are within the height restrictions zones (JLUSPC 2011). The restrictions on land use within this zone are discussed below.

A small portion of the Plan Area is within the mapped accident potential zone for NAS Lemoore. The NAS Lemoore flight approach/departure zones also extend into the nearby portions of the Plan Area in Fresno County. The height restriction zones extend farther out from the base and have height limits as regulated by the Federal Aviation Administration (FAA). Specifically, portions of the Plan Area within the height restriction zones have height limits ranging from 150 feet nearest NAS Lemoore, with height limits increasing to 500 feet at a point approximately 3 miles west of the airfield, and this 500-foot height limit extends west another 5 miles to just beyond SR-269 (JLUSPC 2011). The tallest structures within the Plan Area would consist of structural elements associated with the electrical substations that would be as high as 140 feet, which would fall within the height restrictions applicable to the nearest DFAs. However, any gen-tie poles that might be installed in this area would be subject to height restrictions as low as 150 feet at locations nearest to NAS Lemoore, with height limits increasing to 500 feet at a point approximately 3 miles west of the airfield. A 10-mile segment of the VCIP connecting transmission corridor runs along the east side of SR-269, within the 500-foot height limit area for NAS Lemoore. The nearest VCIP substation (No. 5) would be located approximately 0.5 mile west of (outside) the outer height restriction area. Thus, all structural elements would readily comply with the height limits for physical obstructions within the applicable NAS Lemoore height restriction zones. Nevertheless, all VCIP projects in the vicinity of NAS Lemoore would be required to comply with FAA notification requirements with respect to compatibility of the vertical structures planned within those projects

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with airport operations. With respect to land use intensity, the JLUS states that renewable energy projects and related structures are normally compatible without restrictions (JLUSPC 2011, p. 4-31).

In summary, implementation of the VCIP Energy Resource and Infrastructure Plans would be consistent with applicable land use plans, policies, and regulations, and thus would have *no impact* with regard to consistency with adopted plans, policies, and regulations.

Mitigation Measures: No mitigation is required.

4.11.3.2. TRANSMISSION CORRIDORS OUTSIDE THE VCIP

The transmission corridors for delivery of solar generation from potential VCIP projects to urban electricity markets in northern and southern California have been identified at a conceptual level in this PEIR to allow a general discussion of environmental impacts associated with transmission line development in these corridors for informational purposes. The delivery transmission lines would pass through the unincorporated areas of ten counties to the north, west and south of the Plan Area. In each of these counties, the transmission lines would mainly traverse lands designated for agricultural uses in the respective general plans and zoning ordinances. In some counties, the corridors would pass through lands designated for rural residential, open space, or other uses. Depending on the county, the zoning ordinances allow utility facilities in all zoning districts either as permitted uses, conditionally permitted uses subject to Planning Commission approval, or permitted subject to administrative approval or Planning Commission review (Alameda Co. 2025a, 2025b; Fresno Co. 2024a, 2025b; Kern County 2009, 2025a, 2025b; Kings County 2010a, 2025a, 2025b; LA County 2015, 2025a, 2025b; Merced Co. 2013, 2025a, 2025b; Monterey Co. 2007, 2010a, 2025e; San Benito Co. 2015b, 2025a, 2025b; San Joaquin Co. 2025a, 2025b; Stanislaus Co. 2023, 2025; Lancaster 2025; Palmdale 1992, 2021, 2025). Therefore, the delivery transmission lines outside the Plan Area would not conflict with adopted plans, policies, or regulations, and there would be *no impact* in this regard.

4.11.3.3. CUMULATIVE IMPACTS

The methodology for conducting the cumulative impact analysis is described in Section 4.1. *Cumulative Impacts*. The analysis considers whether the impacts of two or more past, present, or reasonably foreseeable future projects, including the proposed VCIP, would combine to result in a cumulatively significant impact.

As discussed under Impact LU-1, the VCIP energy and infrastructure projects would not physically divide any established communities within the Plan Area. Most of the cumulative projects would be constructed in rural areas away from existing incorporated or unincorporated communities. Some cumulative projects would be constructed in urban areas, such as the residential, commercial, and industrial projects in the City of Lemoore. These urban projects would mainly be infill projects within existing urban development, or would be developed at the outer edges of the urban area, and would not divide the community. Therefore, there would be *no cumulative impact* regarding potential physical division of established communities.

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As discussed under Impact LU-2, implementation of the VCIP energy and infrastructure projects would not conflict with existing plans, policies, and regulations. Most of the other cumulative projects in Fresno County are permitted uses or conditionally permitted uses on lands designated for agricultural use in the County General Plan and Zoning Ordinance. The solar/BESS projects are permitted in the agricultural designation and zone subject to the County's Solar Facility Guidelines. The pistachio plants, highway commercial projects, and utilities substations (e.g., Manning Substation) are permitted uses in the agricultural designations of the County's General Plan and Zoning Ordinance. The residential, commercial, and industrial projects planned for the City of Lemoore urban area are all consistent with their respective general plan and zoning designations.

The consistency of the cumulative projects with Fresno County General Plan Land Use Policy LU-A.23, Farmland Conversion warrants additional discussion. This policy requires mitigation in the form of conservation easements for conversion of Farmland to non-agricultural use. The cumulative impacts with regard to Farmland conversion are discussed in detail in Section 4.2. *Agriculture and Forestry Resources*, subsection 4.2.3.3. *Cumulative Impacts*. That discussion concludes that while a small portion of cumulative projects are located on Farmland, the solar or BESS projects that are located on Farmlands would be subject to the Fresno County Solar Facility Guidelines. The applicable Guidelines requirements for Soil Reclamation and Financial Assurances for decommissioning would ensure that those sites would be restored to a condition suitable for the resumption of agricultural production upon termination of the solar and BESS uses, and that the Farmland on those sites would not be converted to non-agricultural uses. The discussion also concludes that the relatively small portion of solar and non-solar cumulative projects located on Farmland may implement mitigation measures for Farmland conversion in the form of conservation easements as required by GP Policy LU-A.23. While the impact of Farmland conversion would not be fully mitigated, these projects would not conflict with this Farmland conversion policy.

Therefore, none of the cumulative projects would conflict with applicable land use plans, policies, and regulations. As such, there would be *no cumulative impact* in terms of land use plans, policies, and regulations.

In summary, there would be *no cumulative impact* regarding land use effects associated with implementation of the VCIP Energy Resource and Infrastructure Plans.

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4.12. MINERAL RESOURCES

This section includes the following discussion and analysis related to mineral resources: existing physical and regulatory setting; criteria and methodology for evaluating impacts; and results of the impact assessment, including identification of potentially significant impacts and corresponding mitigation measures to avoid or substantially lessen such impacts to the extent feasible, as appropriate. The District received no scoping comments pertaining to mineral resources (see Scoping Report in Appendix A of this document). [Note: Comments from the California Department of Conservation (CDOC), Geologic Energy Management Division (CalGEM) regarding construction in proximity to existing oil and gas wells are addressed in Section 4.9. *Hazards and Hazardous Materials*.]

4.12.1. Environmental Setting

Mineral and Aggregate Resources

Fresno County has abundant and varied 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, mercury), and construction and industrial materials (asbestos, gypsum, and limestone). The California Department of Conservation, California Geological Survey (CGS) has designated two Mineral Resource Zones (MRZs) in Fresno County that have important aggregate deposits. These are located along the San Joaquin River east of State Route 99, and along the Kings River downstream of Big Pine Dam (CGS 2025; Fresno County 2023b).

According to the Mineral Resources Data System (MRDS) administered by the U.S. Geological Survey (USGS), there are four identified aggregate resource operations within western Fresno County in the vicinity of the VCIP Plan Area. These four active sand and gravel operations are adjacent to drainage courses emerging from the western foothills, including operations on: Little Panoche Creek, approximately seven miles northwest of the Plan Area; Panoche Creek, within the western margin of the Plan Area, west of I-5; Warthan Creek, 3.5 miles west of the Plan Area near Coalinga; and Zapato Chino Creek, 1.5 miles southwest of the Plan Area on SR-33. There is also one active mercury mine and two active gypsum mines in the Diablo Range west of the Plan Area (USGS 2025a).

Oil and Natural Gas

Oil and natural gas production has long been a major industry in western Fresno and Kings counties, particularly in the foothills around Coalinga, Avenal, and Kettleman City. According to CalGEM, there are several designated oil and gas fields located within or partially within the Plan Area. In the Plan Area east of I-5, there is one small gas field and five small oil fields, all of which have been officially classified as “abandoned.” In the foothills around Coalinga, there are several large active oil fields which partially extend into the Plan Area. These oil fields include thousands of formerly producing oil wells, most of which are idle or have been plugged and abandoned. Outside the designated oil and gas fields, there are hundreds of non-producing oil and gas wells scattered throughout the remainder of the Plan Area, most of which were dry holes. There are no remaining actively producing oil or gas wells within or near the Plan Area. However, there are several new exploratory wells within the Plan Area, including two wells southwest of the I-5/SR-145 interchange, and three new wells to the west of Five Points (CalGEM 2025a).

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4.12.2. Regulatory Context

Federal

There are no federal regulations pertaining to mineral resources that are applicable to the VCIP.

State

State Surface Mining and Reclamation Act

The Surface Mining and Reclamation Act of 1975 (SMARA) authorized the State Mining and Geology Board (SMGB) to, after receipt of mineral information from the State Geologist pursuant to Public Resources Code section 2761(d), designate specific geographic areas of the state containing mineral deposits as areas of regional or statewide significance. The objective of the classification and designation processes is to ensure, through appropriate lead agency policies and procedures, that mineral deposits of statewide or regional significance (i.e., of “prime importance of meeting future need”) are not prematurely developed for alternative incompatible uses and are thus available when needed. Pursuant to SMARA, the CGS established MRZs to classify the regional significance of mineral resources in the state. MRZs are defined as follows:

- MRZ-1: An area where adequate information indicates there are no significant mineral deposits present, or where little likelihood exists for their presence.
- MRZ-2: An area with adequate information indicating significant mineral deposits are present, or where a high likelihood exists for their presence.
- MRZ-3: An area containing known or inferred mineral occurrences of undetermined mineral resource significance.
- MRZ-4: An area where geologic information does not rule out either the presence or absence of mineral resources.

According to maps of MRZs within Fresno County, the VCIP Plan Area is not within or near an MRZ. Additionally, there are no active aggregate mines in the VCIP Plan Area (DMR 2025).

California Geologic Energy Management Division

CalGEM (formerly 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. CalGEM’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. CalGEM either prohibits land developments over or near plugged or abandoned oil and gas wells, or requires remediation of wells to current CalGEM standards.

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Fresno County

Fresno County General Plan

The Fresno County General Plan (Fresno County 2024b) includes the following goals and policies related to mineral resources that may be relevant to the VCIP:

Open Space and Conservation Element

C. Mineral Resources

Goal OS-C To conserve areas identified as containing significant mineral deposits and oil and gas resources for potential future use, while promoting the reasonable, safe, and orderly operation of mining and extraction activities within areas designated for such use, where environmental, aesthetic, and adjacent land use compatibility impacts can be adequately mitigated.

Minerals

Policy OS-C.1 Incompatible Mining Uses
The County shall not permit incompatible land uses within the impact area of existing or potential surface mining areas.

Policy OS-C.2 Mineral Resource Zones
The County shall not permit land uses incompatible with mineral resource recovery within areas designated as Mineral Resource Zone 2 (MRZ-2).

Policy OS-C.7 Mining Buffers
The County shall require that new non-mining land uses adjacent to existing mining operations be designed to provide a buffer between the new development and the mining operations. The buffer distance shall be based on an evaluation of noise, aesthetics, drainage, operating conditions, biological resources, topography, lighting, traffic, operating hours, and air quality.

Policy OS-C.10 Mineral Resource Lands Protection
The County shall not permit land uses that threaten the future availability of mineral resource or preclude future extraction of those resources.

Policy OS-C.12 New Development Compatibility
The County shall ensure that new discretionary land use developments are compatible with existing and potential surface mining areas and operations as identified on the Mineral Resource Zone Maps prepared by the State Division of Mines and Geology and other mineral resource areas identified by the County.

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Oil and Gas

Policy OS-C.21

Active Petroleum Wells

The County shall not allow any building intended for human occupancy to be located near any active petroleum well unless suitable safety and fire protection measures and setbacks are approved by the local fire district.

4.12.3. Environmental Impact Analysis

METHODOLOGY

Evaluation of potential impacts related to mineral resources was based on a review of policies, maps, and plans that may apply to the proposed VCIP, which could include the General Plan and “General Plan Background Report” for Fresno County, California Geological Survey’s Mineral Lands Classification Database, USGS Mineral Resources Data System database, and CalGEM Oil/Gas Well Database.

SIGNIFICANCE CRITERIA

Based on Appendix G of the CEQA Guidelines, implementation of the VCIP would be considered to result in a significant impact related to mineral resources if it would:

- a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.
- a. 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.

4.12.3.1. DIRECT AND INDIRECT EFFECTS

Impact MIN-1. Loss of Availability of a Known Mineral Resource

Implementation of the VCIP Energy Resource and Infrastructure Plans would not cause loss of availability of a known mineral resource that would be of value to the region and the residents of the state. (*Less-than-Significant Impact*)

No lands within or adjacent to the VCIP Plan Area are classified as MRZs, nor are these lands zoned for, or adjacent to lands designated as, an MRZ in the Fresno County General Plan. There is one active aggregate operation on Panoche Creek west of I-5 within the western margin of the Plan Area, but this quarry is not near any lands planned for VCIP solar and energy storage projects or infrastructure projects. Thus, implementation of the VCIP would not affect the operation of this quarry or the availability of mineral resources extracted. There are three additional sand and gravel operations which also would not be affected by implementation of the VCIP because they are outside the Plan Area, to the west. There are no hard rock mining operations in the Plan Area vicinity. In the Diablo Range west of the Plan Area, there is one active mercury mine and two active {00081353.1}

gypsum mines. These mines also would not be affected by the VCIP because they are outside the Plan Area. Implementation of the VCIP energy and infrastructure projects would therefore not result in a loss of availability of a known mineral resource that would be a value to the region and the residents of the state. As such, any potential impacts in this regard would be *less than significant*.

Historically, there were several oil and gas wells within the Plan Area, all of which have been abandoned. Currently, there are no active oil or gas wells in the Plan Area. Two exploratory oil wells located west of I-5 are not near any lands planned for VCIP clean energy or infrastructure projects and therefore would be unaffected. Three exploratory wells were planned near Five Points, and an unclassified conditional use permit (UCUP) for the well drilling project was approved by Fresno County in 2019. However, a review of historical aerial photography indicates the site was cleared of orchard trees and graded by September 2020, and then replanted with almonds by April 2021. This oil well drilling site is located 300 feet east of the planned VCIP connecting transmission corridor, which indicates that any oil wells drilled on this site would be too far from the VCIP transmission line to be affected by its construction and operation.

There is always the possibility that oil and gas extraction in the project area could become feasible under future economic conditions and new technologies. However, like recent solar and energy storage projects in the area, the VCIP energy projects would include open areas within and around the facilities that would be accessible to mineral rights holders if drilling within the Plan Area were to become economically feasible in the future. In addition, once the VCIP facilities reach the end of their operating lives and are decommissioned, the reclaimed lands would be widely accessible for oil and gas exploration and/or extraction if needed. Similarly, the VCIP transmission lines would have very small footprints at the tower sites, and the narrow linear character of the transmission lines would not interfere with access to any nearby oil and gas resources. Construction of the VCIP clean energy and infrastructure projects would not interfere with access to oil and gas resources, and impacts related to access to important oil and gas resource recovery sites would be *less than significant*.

In summary, the construction of the VCIP energy and infrastructure projects would not result in the loss of availability of a known mineral resource. Therefore, the impact upon mineral resources would be *less than significant*.

Mitigation Measures: No mitigation is required.

Impact MIN-2. Loss of Availability of a Locally-Important Mineral Resource Recovery Site

Implementation of the VCIP Energy Resource and Infrastructure Plans would not cause a loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan. (*Less-than-Significant Impact*)

No lands within or adjacent to the VCIP Plan Area are classified as MRZs, nor are these lands zoned for, or adjacent to lands designated as, an MRZ in the Fresno County General Plan (Fresno County 2023b). As such, construction of the VCIP projects and transmission lines would not result in the loss of availability of a locally-important mineral resource recovery site and the impact would be *less than significant*.

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Mitigation Measures: No mitigation is required.

4.12.3.2. TRANSMISSION CORRIDORS OUTSIDE THE VCIP

Transmission corridors for delivery of solar generation from VCIP projects to urban electricity markets in northern and southern California have been identified at a conceptual level in this PEIR to allow a general discussion of environmental impacts associated with transmission line development in these corridors for informational purposes. These transmission delivery corridors extend far beyond the District's boundaries and are not part of the VCIP. Planning and approval of these outside transmission lines are under the jurisdiction of state and federal energy regulatory agencies, public utilities, and cities and counties traversed by the transmission corridors. The following discussion provides an overview of potential impacts of the outside transmission lines with respect to mineral resources.

The delivery transmission lines extending outside the Plan Area to regional load centers would have a total corridor length of approximately 348 miles and would pass through 10 counties (see Figure 2.4-1). The northern transmission corridor would extend from the valley floor to the lower foothills of the Diablo Range, which it would then follow for most of its length before descending to the valley again in Alameda County. The western transmission corridor would commence on the valley floor and then traverse the Coast Ranges on the way to Moss Landing. The southern transmission corridor would extend south along the valley floor before traversing the Tehachapi Mountains and the Antelope Valley on the way to its terminus near Acton.

Loss of Availability of Known Mineral Resource

The northern transmission corridor would be located in the vicinity of several mineral production sites in the Mount Diablo Range, including manganese and silica mines, and sand and gravel pits along drainage courses (USGS 2025a). This corridor would pass through the vicinity of several active and abandoned gas fields. There are numerous gas wells in the vicinity of the transmission corridor, but all were dry holes and have been abandoned. The northern transmission corridor would not pass by any active oil or gas wells (CalGEM 2025a).

The western transmission corridor would pass several mineral production sites including mercury, copper, magnesite, and barium mines, stone and limestone quarries, and sand and gravel pits (USGS 2025a). This transmission corridor would pass several gas wells in northwest Fresno County and near Hollister, but all were dry holes and have been abandoned. The western transmission corridor would not pass any active oil or gas wells (CalGEM 2025a).

The southern transmission corridor would pass several mineral production sites including aggregate mines in the valley portions of Kings and Kern Counties, gold and antimony mines in the Tehachapi Range, and limestone quarries in the foothills west of the Antelope Valley. This transmission corridor would pass through several active and abandoned oil and gas fields, particularly the large oil fields in the Lost Hills area of Kern County. There are numerous oil and gas wells in the vicinity of the southern transmission corridor, but all nearby wells have been abandoned. The southern transmission corridor would not pass any active oil or gas wells (CalGEM 2025a).

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The outside transmission corridors all would pass through areas with active mineral production sites, but do not pass near enough to these operations to have an adverse effect. Due to the widely dispersed locations of the many oil and gas wells in the San Joaquin Valley, it is common for transmission lines to pass through areas with active and inactive oil and gas wells. The outside transmission corridors also would pass through a few designated oil fields, but would not pass through or near any areas with active oil or gas wells. Construction and operation of the outside transmission lines would not cause a loss of availability of mineral resources and the impact would be *less than significant*.

Loss of Availability of Designated Mineral Resource Recovery Site

As discussed in Section 4.12.2. *Regulatory Context*, the CGS has established MRZs to classify lands that contain mineral deposits. MRZ-1 lands have little potential for the presence of significant mineral resources. MRZ-2 lands have significant mineral resources or a high likelihood for their presence exists. MRZ-3 lands have known or inferred mineral occurrence of undetermined mineral resource significance. MRZ-4 lands have unknown mineral occurrences.

The lands that would be traversed by the outside transmission corridors are highly variable in terms of MRZ classification. The northern transmission corridor mainly would pass through lands classified as MRZ-1, MRZ-2 and MRZ-3 along the foothills, and would pass through unclassified lands in the valley areas. The western transmission corridor would pass through an MRZ-3 area in the central segment and is unclassified in the eastern and western segments. The southern transmission corridor is classified as MRZ-3 throughout its western Kern County segments and is unclassified through the Tehachapi Range and Antelope Valley.

These MRZ classifications are used by local governments for corresponding provisions in their General Plans and other planning documents. Based on the above, substantial portions of the outside transmission corridors would pass through areas with known or potential mineral resources, primarily aggregates. Given the narrow rights-of-way of the transmission lines and the small and widely spaced locations of the transmission towers, however, construction and operation of the outside transmission lines would not impede access to these designated mineral resource areas, and the impact would be *less than significant*.

4.12.3.3. CUMULATIVE IMPACTS

As discussed under Impacts MIN-1 and MIN-2, the VCIP clean energy and infrastructure projects would not cause a loss of availability of known mineral resources or a loss of availability of a locally important mineral resource site. None of the cumulative projects identified in Section 2.2 are located near existing mineral or aggregate extraction sites, producing oil or gas wells, or potential mineral recovery areas as delineated by government agencies. As such, none of the cumulative projects, including the VCIP projects, would result in the loss of availability of known mineral resources, or in the loss of availability of a locally important mineral resource delineated on a local land use plan. Therefore, implementation of the VCIP energy resource and infrastructure plans would *not make a cumulatively considerable contribution* to any cumulative impact related to mineral resources.

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Transmission Corridors Outside the VCIP

Construction of the outside transmission lines would not result in the loss of availability of mineral resources or impede access to designated mineral resources areas in the counties the transmission lines would pass through. Therefore, the outside transmission lines would have a less-than-significant impact on mineral resources, and the contribution to any cumulative impact would not be cumulatively considerable. Consideration of cumulative impacts to mineral resources resulting from development in the 10 affected counties is beyond the scope of this PEIR. It is reasonable to assume, however, that through project-level review, cumulative projects would be sited and implemented to avoid the loss of availability of mineral resources or the loss of availability of an important mineral resource site as designated on local general plans or other plans. The contribution to any impact to mineral resources from the outside transmission projects would *not be cumulatively considerable* and the cumulative impact of construction of the outside transmission lines would be *less than significant*.

4.12.4. References – Mineral Resources

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4.13. NOISE

This section includes the following discussion and analysis related to noise: existing environmental and regulatory setting; criteria and methodology for evaluating impacts; and the results of the impact assessment, including identification of potentially significant impacts and corresponding mitigation measures to avoid or substantially lessen such impacts to the extent feasible. The following discussion is based on technical input prepared for the PEIR by Illingworth & Rodkin, Inc. (I&R), Acoustics and Air Quality Consultants, in July 2025. The noise measurement data prepared by I&R is contained in Appendix D of this PEIR.

PEIR Scoping Comments

During the PEIR Scoping Process, the District received one letter containing a comment related to noise. The comment is quoted below.

Leadership Counsel for Justice and Accountability

“The EIR must evaluate the noise impacts of implementation of the VCIP will have on nearby residents and local wildlife species, considering the vicinity of the proposed area to neighboring communities. This analysis should encompass assessing existing ambient noise levels to establish a baseline for comparison with projected noise levels from the proposed developments. This should include the use of advanced noise propagation modeling techniques which allow for predicting how noise generated by construction and operational activities will propagate through the surrounding environment.

Furthermore, the analysis should consider cumulative noise impacts by examining the combined effects of noise from the proposed developments along with other existing and planned noise sources in the area, such as transportation infrastructure and industrial facilities. Additionally, temporal noise patterns should be analyzed to understand variations in noise levels throughout the day, week, and year, which can significantly impact community health, sleep patterns, and overall quality of life. By conducting a thorough examination of noise impacts and proposing appropriate mitigation measures such as noise barriers, sound insulation, and operational controls, the EIR can provide valuable insights into safeguarding the well-being of both communities and wildlife in the VCIP region.”

[Potential impacts associated with noise are addressed below in Section 4.13.3. *Environmental Impact Analysis* under Impacts NOI-1 through NOI-3. Potential noise impacts to wildlife species are addressed in Section 4.3. *Biological Resources*.]

4.13.1. Environmental Setting

4.13.1.1. 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.

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Loudness is the 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.

Sound produced by a small, stationary noise source or a “point” source radiates uniformly outward as it travels away from the source in a spherical pattern. The sound level attenuates at a rate of 6 dBA for each doubling of the distance between the noise source and receptor. This decrease in noise level with distance, resulting from the geometric spreading of the energy over an ever-increasing area, is referred to as the inverse square law. Mobile sources of noise, such as traffic along a roadway, is characterized as a “line” source rather than a point since the noise moves with time. This results in cylindrical spreading rather than spherical spreading. Because the change in surface area of a cylinder only increases by two times for each doubling of the radius instead of the four times associated with spheres, the change in sound level is 3 dBA for each doubling of the distance between the noise source and receptor.

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 4.13-1. 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, as described here. 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 4.13-2.

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 (dBA).

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 dBA penalty added to evening (7:00 PM to 10:00 PM) noise levels and a 10 dBA penalty added to nighttime (10:00 PM to 7:00 AM) noise levels. The *Day/Night Average Sound Level (L_{dn})* is

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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.

Effects of Noise on People

There is no universally accepted way to measure the subjective effects of noise, or the corresponding reactions of annoyance and dissatisfaction. A wide variation exists in the individual thresholds of annoyance and different tolerances to noise tend to develop based on an individual's past experiences with noise. Thus, an important way of predicting a human reaction to a new noise environment is the way the new noise compares to the existing noise levels to which one has adapted: the so called "ambient noise" level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise would be judged by those hearing it. With regard to increases in A-weighted noise level, the following relationships occur (Caltrans 2013):

- Except in carefully controlled laboratory experiments, a change of 1-dBA cannot be perceived;
- Outside of the laboratory, a 3 dBA change is considered a barely perceivable difference when the change in noise is perceived but does not cause a human response (such as annoyance or nuisance);
- A change in level of at least 5 dBA is required before any noticeable change in human response would be expected; and
- A 10 dBA change is subjectively heard as approximately a doubling in loudness and can cause an adverse response (such as hearing damage or psychological effects).

These relationships occur in part because of the logarithmic nature of sound and the decibel system. For example, a ruler is a linear scale: it has marks on it corresponding to equal quantities of distance. One way of expressing this is to say that the ratio of successive intervals is equal to one. A logarithmic scale is different in that the ratio of successive intervals is not equal to one. Each interval on a logarithmic scale is some common factor larger than the previous interval. A typical ratio is 10, so that the marks on the scale read: 1, 10, 100, 1,000, 10,000, etc., doubling the variable plotted on the x-axis. The human ear perceives sound in a non-linear fashion; hence, the decibel scale was developed. Because the decibel scale is based on logarithms, two noise sources do not combine in a simple additive fashion, rather they combine logarithmically. For example, if two identical noise sources produce noise levels of 50 dBA, the combined sound level would be 53 dBA, not 100 dBA.

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 2018).

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TABLE 4.13-1
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
20 dBA		
Wilderness area		Quiet bedroom at night
10 dBA		
		Threshold of human hearing
0 dBA		

Source: Illingworth & Rodkin, Inc.

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TABLE 4.13-2
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, Inc.

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4.13.1.2. EXISTING NOISE ENVIRONMENT

The existing noise environment in the Plan Area is typical of rural agricultural environments. The primary noise sources in the area include: 1) vehicle traffic; 2) agricultural equipment and crop dusters; and 3) occasional overflights by military aircraft from Naval Air Station Lemoore (NASL).

In October 2024, Illingworth & Rodkin completed a noise monitoring survey to document existing noise levels at key locations within and around the Plan Area. The noise measurement locations are shown in Figure 4.13-1. Noise measurement locations were selected to represent “noise-sensitive receptors” such as residences, transient lodging, schools, libraries, churches, hospitals, and convalescent homes within the Plan Area. There are numerous rural dwellings and two elementary schools within the Plan Area. The community of Cantua Creek, near the center of the Plan Area, includes approximately 100 residences and the Cantua Elementary School, and represents the greatest concentration of sensitive receptors within the Plan Area.

Long-term (24-hour) and short-term (10-minute) noise measurements were made with Larson Davis Model LxT1 Integrating Sound Level Meters (SLMs) set at “slow” response. The sound level meters were equipped with PCB Model 377B02 1/2” free-field, prepolarized condenser microphones fitted with windscreens. The SLMs were calibrated prior to the noise measurements using a Larson Davis Model CAL200 or Model CA250 acoustical calibrator. At the completion of monitoring, the noise data were obtained from the SLMs using the Larson Davis G4 software program. All instrumentation used during the noise survey met the requirements of the American National Standards Institute SI 4-1983 for Type I use.

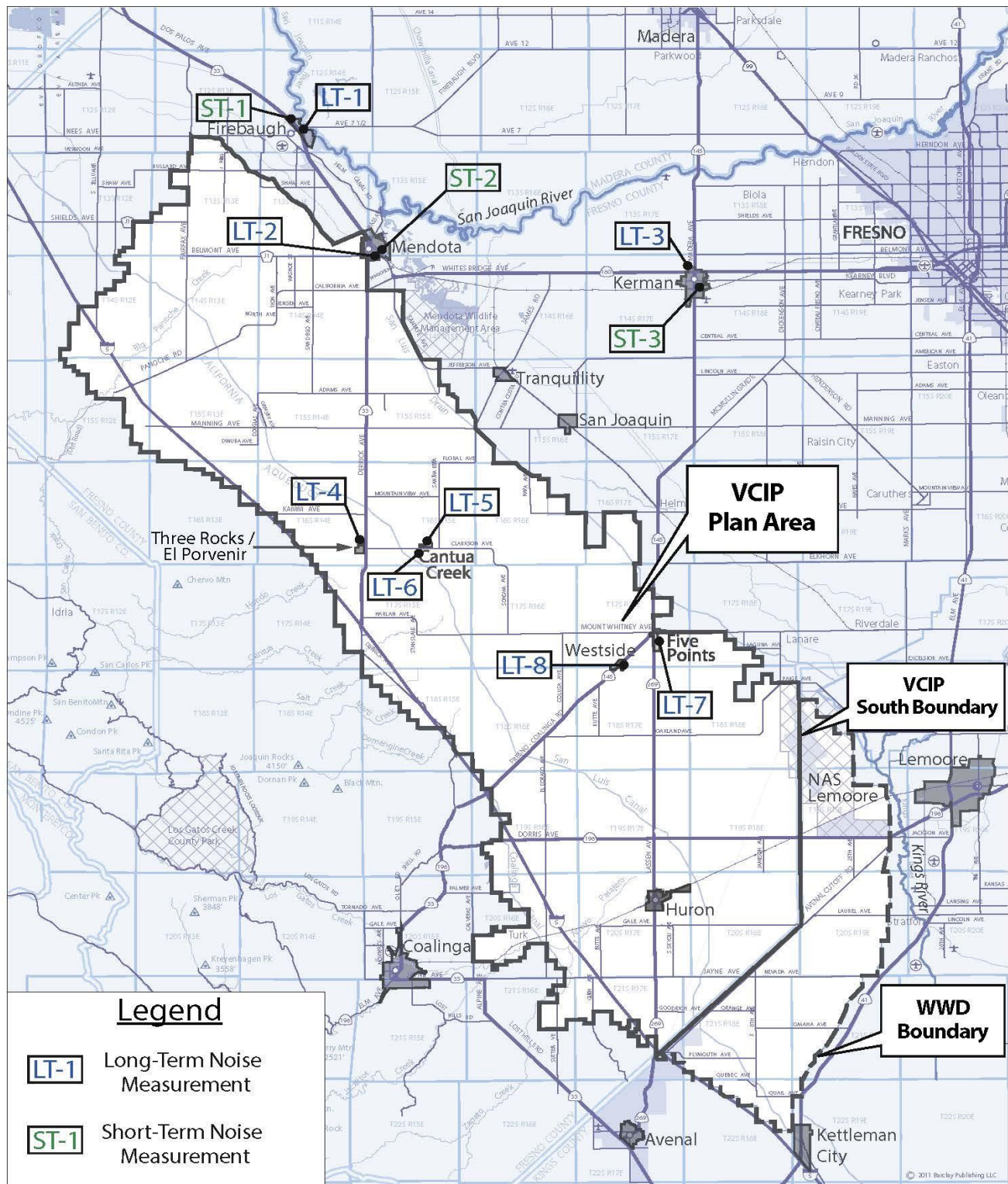
Weather conditions were observed during the long-term and short-term noise measurements. Conditions ranged from mostly cloudy to mostly sunny skies with calm to moderate winds (0 to 8 mph). Temperatures generally ranged between 66°F to 96°F. Weather conditions which have the potential to influence noise measurements, such as rain or high winds, did not occur during the noise survey.

Long-term noise measurements were conducted at eight locations in the communities of Firebaugh (LT-1), Mendota (LT-2), Kerman (LT-3), Three Rocks (LT-4), Cantua Creek (LT-5 and LT-6), Five Points (LT-7) and Westside (LT-8). The ambient (background) noise levels were recorded at locations near existing roadways traversing the area and are expected to be representative of the existing ambient noise levels at the nearest sensitive receptors to the transportation corridors. The ambient noise levels measured in the interior of the Cantua Creek community at LT-5 are expected to be representative of the existing ambient noise levels at sensitive receptors located some distance from Clarkson and San Mateo Avenues.

Table 4.13-3 summarizes the day-night average and hourly average noise levels measured at the long-term sites during the noise survey. Graphs depicting the noise data collected at each long-term site are contained in Appendix D of this PEIR.

Short-term measurements were conducted at three locations in the communities of Firebaugh (ST-1), Mendota (ST-2), and Kerman (ST-3). Table 4.13-4 summarizes the day-night average and hourly average noise levels measured at the short-term sites during the noise survey. Graphs depicting the noise data collected at each short-term site are contained in Appendix D of this PEIR.

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Source: Illingworth & Rodkin

Noise Measurement Locations
Figure 4.13-1

TABLE 4.13-3
SUMMARY OF LONG-TERM NOISE MEASUREMENT DATA

Noise Measurement Site	Day-Night Average Noise Level (L_{dn})	Hourly Avg. Noise Level Range (L_{eq})	
		Daytime 7 a.m. to 10 p.m.	Nighttime 10 p.m. to 7 a.m.
LT-1 - Firebaugh - 45 feet from the Centerline of 13th Street at Q Street	74	64-74	60-72
LT-2 - Mendota - 75 feet from the Centerline of Belmont Avenue at 9th Street	66	58-67	50-64
LT-3 - Kerman - 100 feet from the Centerline of Whitesbridge Avenue at S. Del Norte Avenue	70	65-69	57-68
LT-4 - Three Rocks - 50 feet from the Centerline of S. Derrick Avenue at El Progreso Avenue	73	62-72	59-71
LT-5 - Cantua Creek - 25 feet from the Centerline of W. Latta Avenue	59	43-70	32-48
LT-6 - Cantua Creek - 40 feet from the Centerline of Clarkson Avenue	65	56-70	40-68
LT-7 - Five Points - 35 feet from the Centerline of Lassen Avenue	76	67-75	61-74
LT-8 - Westside - 100 feet from the Centerline of Fresno Coalinga Road	73	63-70	58-71

Source: Illingworth & Rodkin, Inc.

TABLE 4.13-4
SUMMARY OF SHORT-TERM NOISE MEASUREMENT DATA

Noise Measurement Site	Estimated Day-Night Average Noise Level (L_{dn})	Maximum Instantaneous Noise Level (L_{max})	Median Noise Level (L_{50})	Background Noise Level (L_{90})	Average Noise Level (L_{eq})
ST-1 - Firebaugh - 60 feet from the Centerline of Highway 33 at Yip Street (10/10/24, 2:50-3:00 p.m.)	67	81	58	44	66
ST-2 - Mendota - 80 feet from the Centerline of 11 th Street at Oller Street (10/10/24, 1:05-1:15 p.m.)	66	78	59	50	64
ST-3 - Kerman - 65 feet from the Centerline of S. Madera Avenue (10/10/24, 4:25-4:35 p.m.)	69	82	56	46	68

Source: Illingworth & Rodkin, Inc.

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4.13.2. Regulatory Context

Fresno County

Fresno County General Plan

The Fresno County (County) General Plan contains the following goals and policies related to noise and vibration which are relevant to the VCIP.

Health and Safety Element

H. Noise

GOAL HS-H To protect residential and other noise-sensitive uses from exposure to harmful or annoying noise levels; to identify maximum acceptable 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-H.1 **Minimize Noise Impacts**

The County shall require that all proposed development incorporate design elements necessary to minimize adverse noise impacts on surrounding land uses.

Policy HS-H.4 **Noise Mitigation Design and Acoustical Analysis**

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 the Figure HS-9: “Land Use Compatibility for Community Noise Environments;”
- 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 uses.

Policy HS-H.5 **Noise Mitigation Measures**

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 been evaluated or integrated into the project.

Policy HS-H.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.

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Policy HS-H.7

Noise impacts to Sensitive Uses

Where existing noise-sensitive uses may be exposed to increased noise levels due to roadway improvement projects, the County shall apply the following criteria to determine the significance of the impact:

- a. Where existing noise levels are less than 60 dB Ldn at outdoor activity areas of noise-sensitive uses, a 5 dB Ldn increase in noise levels will be considered significant;
- b. Where existing noise levels are between 60 and 65 dB Ldn at outdoor activity areas of noise-sensitive uses, a 3 dB Ldn increase in noise levels will be considered significant; and
- c. Where existing noise levels are greater than 65 dB Ldn at outdoor activity areas of noise-sensitive uses, a 1.5 dB Ldn increase in noise levels will be considered significant.

Policy HS-H.10

Construction Vibration Control Measures

The following measures to minimize exposure to construction vibration shall be included as standard conditions of approval for projects involving construction vibration within 50 feet of historic buildings or nearby sensitive receivers shall:

- a. Avoid the use of vibratory rollers within 50 feet of historic buildings or residential buildings with plastered walls that are susceptible to damage from vibration and;
- b. Schedule construction activities with the highest potential to produce vibration to hours with the least potential to affect nearby institutional, educational, and office uses that are identified as sensitive to daytime vibration by the Federal Transit Administration in Noise and Vibration Impact Assessment (FTA 2018).

Fresno County Ordinance Code (Ordinance Code)

Chapter 8.40 of the Ordinance Code sets forth requirements and procedures for noise abatement in the County (the Noise Ordinance). Section 8.40.040 (Exterior Noise Standards) provides:

- 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 7 a.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

- B. In the event the measured ambient noise level exceeds the applicable noise level standard in any category above, the applicable standard shall be adjusted so as to equal the ambient noise level.

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- C. Each of the noise level standards specified above shall be reduced by five dB(A) for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises.
- D. If the intruding noise source is continuous and cannot reasonably be discontinued or stopped for a time period whereby the ambient noise level can be measured, the noise level measured while the source is in operation shall be compared directly to the noise level standards.”

In addition to the exterior noise standards, Ordinance Code section 8.40.090 (Electrical substations), identifies a noise level limit of 50 dBA for electrical substations when measured 50 feet from an affected residence.

Section 8.40.060 (Noise source exemptions) contains various noise source exemptions from the Noise Ordinance. Section 8.40.060(B) exempts noise from any mechanical device, apparatus or equipment used, related to or connected with emergency activities or emergency work. Section 8.40.060(C) exempts noise sources associated with construction activities from the standards provided they take place after 6:00 a.m. and before 9:00 p.m. on Monday through Friday, or after 7:00 a.m. and before 5:00 p.m. on weekends. Section 8.40.060(G) provides that noise sources associated with work performed by private or public utilities in the maintenance or modification of its facilities are exempt from the Noise Ordinance.

4.13.3. Environmental Impact Analysis

METHODOLOGY

The evaluation of potential noise and vibration impacts resulting from the VCIP implementation is based on technical input prepared for this PEIR by Illingworth & Rodkin, Inc., Acoustics and Air Quality Consultants, in June 2025. To establish baseline conditions, noise measurements were taken at several sensitive receptor locations throughout the Plan Area in October 2024. Graphs displaying the noise measurement data are contained in Appendix D of this PEIR. Projections of construction noise from potential VCIP projects were based on established noise emission levels for various pieces of equipment anticipated to be used during construction. Traffic noise generated by VCIP projects was calculated based on data contained in the traffic report prepared for this PEIR by Peters Engineering Group in January 2025. (The Traffic Report is contained in Appendix E of this PEIR). Resulting noise levels were calculated for each receptor site and compared to Fresno County’s noise criteria and standards to determine potential noise impacts and identify corresponding mitigation measures to avoid or substantially lessen such impacts to the extent feasible.

SIGNIFICANCE CRITERIA

Based on Appendix G of the state CEQA Guidelines, implementation of the VCIP would be considered to result in a significant impact related to noise or vibration if it would result in:

- a. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
- b. Generation of excessive groundborne vibration or groundborne noise levels.

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- c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, the project would expose people residing or working in the project area to excessive noise levels.

4.13.3.1. DIRECT AND INDIRECT EFFECTS

Impact NOI-1. Substantial Increase in Ambient Noise Levels

Implementation of the VCIP Energy Resource and Infrastructure Plans could result in substantial temporary or permanent increase in ambient noise levels in excess of applicable noise standards; however, noise levels would be reduced to less-than-significant through specified noise mitigation measures to be applied at the project-specific level. (*Less-than-Significant Impact with Mitigation*)

Noise would be generated during the construction, operation, and decommissioning phases of VCIP projects. The potential for temporary and permanent noise sources from VCIP projects to exceed applicable noise standards is discussed below.

Construction Phase

On-Site Construction Noise

Projects within the VCIP would be built out over a large geographic area during an approximately 10-year period. As the Plan Area is sparsely populated, much of the construction activity would occur in areas where construction noise levels would be sufficiently attenuated by distance alone. The steady rate of construction at any location within the project site would also minimize the overall noise exposure at any noise-sensitive receptor site.¹

The construction noise assessment for the VCIP focuses on the community of Cantua Creek, which has the greatest concentration of sensitive receptors near the large areas proposed for solar facility development in the Plan Area. Figure 4.13-2 on the next page shows the VCIP project areas near sensitive receptors in the Cantua Creek community, including residential areas and Cantua Elementary School. For purposes of this analysis, the LT-5 noise measurement location was identified as the location of the Maximally Exposed Individual (MEI), which would be representative of receptors having the lowest ambient noise levels that would be exposed to the highest construction noise levels over the longest period of time. It is estimated that approximately 1,700 acres of VCIP lands would be subject to potential development within three miles of this community. The noise assessment assumed that construction of the solar and battery energy storage system (BESS) facilities on these lands would be completed in approximately 12 months, which is typical for this amount of solar and BESS development. Therefore, construction activities occurring in the immediate vicinity of individual noise-sensitive land uses, where the receptors would be subject to the highest noise levels, would be temporary.

The construction noise levels at individual receptors in Cantua Creek and elsewhere within the Plan Area would depend on the noise generated by various pieces of construction equipment, the timing and duration of noise-

¹ Under standard practices that would be followed during implementation of the proposed VCIP, construction of solar facilities progresses quickly through the solar field, such that any given location within the project site is only subject to construction activity for a month or two in total.

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generating activities, and the distance between construction noise sources and noise-sensitive receptors. Construction would be completed in several phases, including site preparation, installation of solar arrays, installation of inverters, transformers, and substations, and installation of the BESS. Construction noise levels produced by heavy-duty diesel equipment such as loaders, graders, and diesel-fueled haul trucks would be highest during site grading, excavation, and installation of solar equipment. Hourly average noise levels generated by construction equipment are calculated to range from 85 dBA L_{eq} to 87 dBA L_{eq} measured at a distance of 50 feet (the approximate distance of the MEI), conservatively assuming that all equipment is operating simultaneously.

During the vast majority of construction, however, noise levels at the nearest receptors would be much lower. Construction-generated noise levels drop off at a rate of about 6 dBA per doubling of distance between the source and receptor, and noise levels decrease as construction moves away from sensitive receptors. Assuming that all equipment is operating simultaneously, at 500 feet, maximum construction noise levels would range from 65 to 67 dBA L_{eq} , and at 5,000 feet, maximum construction noise levels would range from 45 to 47 dBA L_{eq} . Beyond approximately 1,100 feet, construction noise levels would be reduced to 60 dBA L_{eq} or less, which would have little effect on speech communication outdoors or typical indoor activities such as reading or watching television.

FIGURE 4.13-2

CANTUA CREEK COMMUNITY, CONSTRUCTION AREAS AND SENSITIVE RECEPTORS



Source: Illingworth & Rodkin, Inc.

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VCIP implementation would also include construction of the five collection substations, which would generate noise levels similar to those noted for solar and BESS construction. At the planned locations of the substations, the nearest residential receptors would be at least 0.5 miles from a substation site. At this distance, noise generated by substation construction would be 51 to 53 dBA L_{eq} .

VCIP implementation would also involve construction of gen-tie lines and connecting transmission lines. 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. Helicopter construction would be used for stringing pilot wires for conductors. The operation of a helicopter for construction would generate maximum noise levels of approximately 80 dBA at 200 feet (USBLM 2016, p. 3.23-11).

At the planned route of the connection transmission corridor, the nearest sensitive land uses would generally be located at least 0.5 miles away, except for one land use (the UC Westside Research and Extension Center - WSREC) where the nearest residences would be 650 feet from the transmission corridor. Assuming that the nearest tower would be planned directly opposite the affected residences, the highest noise levels at the nearest receptor locations would be 55 to 60 dBA L_{eq} from general construction and 67 dBA L_{eq} from helicopter construction. At receptors located 0.5 miles away, construction noise levels would be 44 to 49 dBA L_{eq} from general construction and 56 dBA L_{eq} from helicopter construction. The general sequence of activities for construction of the connecting transmission lines would involve the following steps: clearing of right-of-way and staging areas; installation of tower footings and structures; and conductor stringing. These construction activities would proceed in a stepwise fashion from one end of the corridor to the other. The duration of construction at any given tower location would be very brief (several days at most).

Due to the conceptual nature of the VCIP, the potential gen-tie line routes cannot presently be determined, and would be established at the project level in conjunction with the proposed development of individual solar and BESS projects. However, gen-tie construction would proceed in the same manner as described for connecting transmission lines above. It is assumed that gen-tie routes would be planned to avoid sensitive receptors to the extent practicable, like the connecting transmission corridors. As such, noise levels associated with gen-tie construction would be similar to those for connecting transmission lines discussed above.

The noise levels resulting from construction of proposed VCIP projects would be intermittent and temporary in duration. The locations affected would vary throughout the area as the focus of construction moves along. The Ordinance Code exempts noise sources associated with construction activities, provided the noise occurs between 6:00 a.m. and 9:00 p.m. Monday through Friday, or between 7:00 a.m. and 5:00 p.m. on weekends. The Ordinance Code further provides that noise sources associated with work performed by private or public utilities in the maintenance or modification of its facilities are also exempt from quantitative noise limits. This analysis assumes that construction of the VCIP energy and infrastructure projects would only occur during allowable daytime hours, which avoids common sleeping hours when the noise disturbance would be most harmful and annoying. It is also anticipated that the construction timelines of potential VCIP projects would ensure that construction occurring in close proximity of receptors would not generally extend over long periods of time (i.e., up to a month or two in total). Construction activities occurring beyond approximately 1,100 feet of a particular receptor would be reduced to 60 dBA L_{eq} or less, which would have little effect on speech communication outdoors or typical indoor activities such as reading or watching television. Most reasonable persons can tolerate a temporary increase in daytime noise levels recognizing that the construction

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timeline is finite. Therefore, project construction activities would not result in a substantial temporary increase in ambient noise levels in excess of the standards established in the local general plan or noise ordinance, or applicable standards of other agencies, and the impact would be *less than significant*.

Off-Site Construction Traffic Noise

The VCIP buildout is planned to be phased over a 10-year period, with substantial construction scheduled to commence in 2029. During peak construction years there would be approximately 6,000 construction workers and supervisors commuting to the site. Construction deliveries would primarily arrive from the Port of Oakland for solar components, with other materials and equipment originating from various California ports, as well as Fresno and Sacramento. Aggregate and concrete is expected to be delivered from the Los Banos area or the Coalinga Area, whichever is nearest to a given VCIP project within the Plan Area.

The analysis of construction traffic noise was based on existing Average Daily Traffic (ADT) volumes on the affected roadway segments. These counted volumes were incrementally increased by one percent per year to establish baseline traffic conditions for each construction year.² The estimated worker commute volumes and truck deliveries generated during project construction were added to the baseline volumes to determine traffic conditions with project construction traffic added. Note that the traffic study (Appendix E of this PEIR) focused on the early peak construction years of 2029, 2031, and 2033 when the most intense construction activity would occur around VCIP collection Substations 1, 3, and 5, as VCIP development progresses from north to south in the Plan Area. The traffic study did not focus on traffic conditions in 2030 and 2032, since the conditions would not vary greatly from the prior and following years. Thus, the three study years are considered representative of highest traffic volumes that could reasonably foreseeably occur in the northern, central, and southern sections of the Plan Area. In the subsequent construction years of 2034-2038, VCIP project development would be more evenly distributed throughout the Plan Area since all the collection substations and connecting transmission lines would be complete and able to accommodate solar and BESS projects anywhere in the Plan Area. This more dispersed development pattern would result in much lower traffic volumes on any given road and highway providing construction access to the various VCIP projects under development in the latter buildout years. For example, in the first year of VCIP development, all construction worker traffic would be focused on the area around the Newpoint Substation (Substation No. 1) at the northern end of the Plan Area, since no infrastructure would have been completed to support solar development in other areas of the Plan Area. As such, construction traffic in the first year, and associated traffic noise, would be concentrated on a few highways connecting the first-year development area with the main population center in Fresno. In the latter development years, all five VCIP substations would be complete and operating, thus facilitating VCIP development throughout the remaining areas of the Plan Area. The construction workers would still largely originate from the Fresno area, but instead of all heading to the north end of the Plan Area, they would fan out southwestward and utilize many traffic routes to arrive at work sites spread over 50 miles between the Newpoint Substation and Substation No. 5. As such traffic conditions on any given roadway in those latter buildout years would not approximate the peak traffic volumes anticipated in the early development years. Therefore, it was not necessary to evaluate the Plan-wide traffic or related noise impacts for those latter years. (For detailed discussion and analysis, see Section 4.16. *Transportation*, under Impact TR-1.)

² Based on population growth projections for Fresno County. The following annual average growth rates are forecast through 2050: Fresno County – 1.1%; cities in western Fresno County – 0.6-1.0%; unincorporated Fresno County – 0.4% (Fresno County 2023b, p.2-9). Based on these forecasts, the growth rate for the Plan Area and vicinity would be less than 1 percent, so the applied growth rate is conservative.
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County of Fresno General Plan Policy HS-H.7 states that where existing noise-sensitive uses may be exposed to increased noise levels due to roadway improvement projects, the project would result in a significant noise impact if: a) the noise level increase is 5 dBA L_{dn} or greater, where the pre-project noise level is less than 60 dBA L_{dn} ; or b) the noise level increase is 3 dBA L_{dn} or greater, where the pre-project noise level between 60 and 65 dBA L_{dn} ; or c) the noise level increase is 1.5 dBA L_{dn} or greater, where the pre-project noise level is 65 dBA L_{dn} or greater (Fresno County 2024b). Although Policy HS-H.7 only applies where existing noise-sensitive uses may be exposed to increased noise levels due to roadway improvement projects, the County General Plan and Ordinance Code do not contain quantitative significance criteria regarding noise-related impacts from other types of construction projects. Therefore, for purposes of this analysis, the standards contained in Policy HS-H.7 are applied as noise criteria for evaluating all VCIP traffic noise sources.

Table 4.13-5 on the following page summarizes the results of the traffic noise level calculations for the anticipated peak traffic noise years of 2029, 2031, and 2033. The noise level calculations were based on projected construction traffic volumes without considering traffic mitigations which would be required to reduce traffic Level of Service impacts. As shown in the table, the receptors that would be most affected by VCIP project construction traffic in 2029 would be those along 13th Street in Firebaugh and Belmont Avenue in Mendota (shown in red in the table). This is because construction activity would be focused solely on the northern portion of the Plan Area around Substation 1 (Newpoint), and because of a limited number of access routes from the main source of workers in the Fresno area. Project construction traffic would increase daily average noise levels at those two locations by 1.6 to 2.1 dBA L_{dn} where the pre-project noise levels are 65 dBA L_{dn} or greater. The construction traffic noise increase along these roadway segments would exceed the 1.5 dBA L_{dn} noise level threshold used to assess the significance of noise impacts where pre-project noise levels are 65 dBA L_{dn} or greater, resulting in a significant temporary impact under the applied noise criteria.

Construction noise level increases along the remaining roadway segments in 2029 would be less than 1 dBA L_{dn} and below the thresholds used to assess the significance of noise impacts due to roadway improvement projects. As noted above, the noise levels shown in Table 4.13-5 reflect unmitigated traffic conditions and do not take into account mitigation measures that would be required to reduce traffic volumes. However, due to capacity constraints on the highways and roads providing access to the anticipated VCIP construction sites, it will be necessary for the VCIP projects to provide substantial reductions in traffic volumes, as specified in Mitigation Measure TR-1, such as shuttle bus service, to avoid congestion during peak commute periods. (For detail see section 4.16. *Transportation*, under Impact TR-1.) While these mitigated traffic conditions are not reflected in the noise levels shown in Table 4.13-5, it is anticipated that with implementation of MM TR-1, overall construction volumes would be approximately 20 percent lower than estimated, with correspondingly lower traffic noise. Therefore, the noise levels projected in Table 4.13-5 are conservative and would likely be higher than actual noise conditions under the buildout of the VCIP.

By 2031 when the focus of proposed VCIP development would be in the central portion of the Plan Area, receptors along San Mateo Avenue in the community of Cantua Creek would be most affected by project construction traffic. Project construction traffic would increase daily average noise levels by 7.5 dBA L_{dn} where the pre-project noise levels are between 60 and 65 dBA L_{dn} . The construction traffic noise increase along this roadway segment would exceed the 3 dBA L_{dn} noise level threshold used to assess the significance of noise impacts where pre-project noise levels are 60 to 65 dBA L_{dn} , resulting in a significant temporary impact under the applied noise criteria. Construction noise level increases along the remaining roadway segments would be less than 1 dBA L_{dn} and below the thresholds used to assess the significance of noise impacts due to roadway improvement projects.

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TABLE 4.13-5
DAILY AVERAGE CONSTRUCTION TRAFFIC NOISE LEVELS AT 50 FEET FROM THE
ROADWAY CENTERLINE

Roadway/ Community	Location	Existing	2029	2031	2033
13th Street Firebaugh	East of N Street (SR 33)	73.5	75.6*	73.8	73.9
Oller Street (SR 180) Mendota	North of Belmont Avenue	68.1	69.1	68.4	68.5
Belmont Avenue Mendota	West of Oller Street (SR 180)	67.9	69.5*	68.2	68.2
Derrick Avenue (SR 33) Three Rocks	North of Clarkson Avenue	72.7	72.9	73.4	73.0
Derrick Avenue (SR 33) Three Rocks	South of Clarkson Avenue	72.7	72.9	73.4	73.0
Clarkson Avenue Three Rocks	West of San Mateo Avenue and east of Cantua School	64.2	64.4	66.9	64.6
Clarkson Avenue Cantua Creek	East of Santa Clara Avenue and west of Cantua School	64.2	64.4	66.9	64.6
San Mateo Avenue Cantua Creek	North of Clarkson Avenue	60.4	60.7	67.9*	60.8
Mt. Whitney Avenue Five Points	East of Lassen Avenue (SR 269 and 145)	74.2	74.4	74.5	75.4
Fresno-Coalinga Road (SR 145) Five Points	South of Mt. Whitney Avenue	75.8	76.0	76.4	76.3
Whitesbridge Rd (SR 180) Kerman	West of Madera Ave (SR 145)	73.1	74.0	73.4	73.5
Madera Ave (SR 145) Kerman	South of Whitesbridge Rd (SR 180)	71.2	71.5	71.8	71.6

* **Red** font indicates locations where the noise criteria would be exceeded.

Source: Illingworth & Rodkin, Inc.

In 2033 when the focus of VCIP development would be in the southern portion of the Plan Area, all receptor locations would be subject to noise level increases that do not exceed the applied noise criteria. .

In the intervening years of 2030 and 2032, traffic and noise conditions would be similar to those estimated for 2029, 2031, and 2033, and therefore there is a potential that the same receptors that would be subject to noise level increases in the study years would also be subject to noise impacts in the intervening years. However, there is little or no potential for additional receptors to be subject to noise impacts during the

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intervening years. During the subsequent construction years of 2034-2038, no receptors are anticipated to be subject to noise levels that exceed the applied noise criteria, for the reasons discussed above.

In summary, the construction traffic generated by the VCIP projects would result in substantial temporary noise level increases at receptors along 13th Street in Firebaugh and along Belmont Avenue in Mendota in 2029, and at receptors along San Mateo Avenue in the community of Cantua Creek in 2031. As noted, the noise level estimates are based on peak traffic conditions without mitigation for traffic or noise impacts. Therefore, the noise impacts identified above would be potentially significant but would be reduced to *less-than-significant with mitigation*.

As noted above, Fresno County has not established noise limit standards for construction traffic noise, apart from those associated with transportation improvement projects, and noise from construction activity is exempt from the County's noise limits provided the work is performed within specified daytime hours. Nevertheless, the County's roadway construction noise standards are applied as noise criteria in the above analysis, and they serve as significance thresholds for general construction traffic noise associated with VCIP implementation for purposes of this PEIR.

In summary, although the traffic noise increases during construction would be temporary and relatively brief at any receptor location, significant noise impacts would occur at certain locations. Therefore, the traffic noise impact due to the VCIP project construction would be potentially significant but would be reduced to *less than significant with mitigation*.

Operational Phase

During the operational phase of the VCIP projects, the two main sources of noise would be from on-site operational activities and from off-site traffic generation by operations staff, each of which is discussed in turn below.

On-Site Noise Sources

The operational noise sources at VCIP energy and infrastructure facilities would primarily include photovoltaic (PV) modules and trackers, power conversion stations (PCSs), and BESS, as well as project substations and VCIP collection substations.

PV modules and trackers produce low noise levels during brief periods of time as the individual slew drive trackers rotate the panels following the path of the sun. The noise level produced by these individual sources is about 52 dBA at 5 feet over a 10-second or less rotation period during daytime hours.

A typical utility-scale solar facility (250 MW) would include a total of about 62 PCS (i.e., inverter/transformer units at 1 unit per 4 MW of output). The predicted noise level attributable to each PCS is 52 dBA L_{eq}/L_{50} measured at a distance of 50 feet from the equipment. Noise generated by an individual PCS would decrease to 50 dBA L_{eq}/L_{50} at a distance of 60 feet. Due to the substantial distance separating each PCS in the solar field (700-850 feet), the operation of multiple PCS would not result in an additive noise effect at a given receiver location.

A typical 250-MW utility-scale solar facility would also include a battery energy storage system (BESS) with approximately 250 storage battery units, each enclosed within 40-foot-long cargo containers. Each battery storage unit would be self-contained and would include racks, switchboards, inverters, and integrated HVAC {AM0006.1}

units. The battery units would be served by transformers located on separate pads outside the containers, with each transformer serving four battery containers. Thus, the typical BESS would consist of 250 battery containers and 63 transformers. The primary BESS noise source would be the electrically powered HVAC units on each container, which would typically produce noise levels of 68 dBA L_{eq}/L_{50} at a distance of 50 feet during full operation. The noise level would decrease to 50 dBA L_{eq}/L_{50} at a distance of 400 feet. However, commonly used BESS (e.g., Tesla Megapack) are water-cooled and generate substantially less noise as observed by Illingworth & Rodkin, Inc. at the Castanea Solar Facility in Kings County in October 2024. Based on the results of the observation and noise measurements, noise levels produced by a typical water-cooled BESS (e.g., Tesla Megapack) are approximately 53 to 56 dBA L_{eq}/L_{50} at 10 feet, decreasing to 50 dBA L_{eq}/L_{50} at 15 to 20 feet. Since BESS are typically clustered together in a dedicated area, the noise measurements at the referenced distances from the outer edge of the BESS facility represent the additive noise effect of multiple BESS units.

Sources of audible noise within substations include equipment such as transformers and their associated cooling fans, reactors, voltage regulators, circuit breakers and other intermittent noise generators. 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}/L_{50} at 200 feet. Based on the results of noise measurements made by Illingworth & Rodkin at the Castanea Solar Facility in October 2024, noise levels produced by a typical project substation are approximately 55 dBA L_{eq}/L_{50} at 125 feet (or 63 dBA L_{eq}/L_{50} at 50 feet). The noise level would decrease to 50 dBA L_{eq}/L_{50} at a distance of 250 feet. The highest noise levels would be produced by circuit breakers, which would occur very infrequently (less than once per year) during emergency conditions when breakers are thrown to protect the system during an electrical fault due to line overloads (which on-site system operators would diligently strive to avoid). The maximum noise level from the breakers would be approximately 105 dBA L_{max} at 50 feet. Under Ordinance Code, section 8.40.060(B)), the emergency circuit breakers would be exempt from the County's noise level limits. Collection substations typically have about three times as much noise generating equipment, therefore noise levels produced by a typical collection substation are approximately 60 dBA L_{eq}/L_{50} at 125 feet (or 68 dBA L_{eq}/L_{50} at 50 feet). The noise level would decrease to 50 dBA L_{eq}/L_{50} at a distance of 400 feet.

The Fresno County General Plan Health and Safety Policy HS-H.4 requires proposed projects that are likely to produce noise levels exceeding the levels shown in the County's Noise Control Ordinance at existing or planned noise-sensitive uses to conduct an acoustical analysis and design noise mitigation. The daytime noise limit enforced at noise-sensitive land uses for projects of this type is 50 dBA L_{50} (Fresno County 2024b). The noise generating components of a typical solar facility would operate only during daytime hours when the solar facility is generating power. There would be no noise generated by the solar facility at night, when County noise limits are 5 dBA more restrictive than the daytime limit (i.e., 45 dBA L_{50}).

Noise from "point" sources decreases at a rate of 6 dBA with each doubling of the distance between the noise source and receptor. Based on the highest noise level estimate of 70 dBA L_{eq}/L_{50} at a distance of 50 feet from solar fields (i.e., assuming project PCSs, electrically cooled BESS, and project substations are all located in proximity to a noise receptor), predicted noise levels are calculated to exceed 50 dBA L_{eq}/L_{50} when located within 500 feet of noise-sensitive land uses. For utility-scale solar projects utilizing water-cooled BESS, this overall noise level would be approximately 66 dBA L_{eq}/L_{50} at 50 feet and would exceed 50 dBA L_{eq}/L_{50} when located within 315 feet of noise-sensitive land uses. Noise produced by the collection substations would exceed 50 dBA L_{eq}/L_{50} when located within 400 feet of noise-sensitive land uses. In summary, the estimated noise levels from project operations can be maintained below the County's 50 dBA L_{50} noise limit for noise-

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sensitive land uses with proper site planning and/or implementation of noise control. However, in cases where operational noise sources would be located within the distances identified above, the potential operational noise impacts would be considered *less-than-significant with mitigation*.

Operational Traffic Noise

Traffic generated during project operations would be very light, given the small number of workers who would travel to the VCIP facilities. It was calculated that the highest traffic noise increase attributable to project operational traffic on the affected roadways would be 0.4 dBA L_{dn} or less as compared to baseline traffic noise conditions. The noise levels would be well below the applicable noise standards discussed above, and would not be noticeable to the potentially affected sensitive receptors. Therefore, the operational traffic generated by the VCIP projects would not result in a substantial permanent increase in ambient noise levels in the project vicinity, and the impact would be *less than significant*.

Decommissioning Phase

Noise levels generated during decommissioning activities would be similar to those generated during construction except that some of the noisiest construction equipment, such as pile drivers and vibratory rollers, would not be used during decommissioning. As is the case with construction noise, the on-site noise generated during decommissioning would only occur during allowable hours and would only affect noise levels at individual receptors over a relatively short period of time. Traffic volumes generated during decommissioning would be similar to those associated with construction, and the resulting noise levels would also be temporary. Therefore, the decommissioning activity and associated traffic would result in a substantial temporary increase in ambient noise levels in the project vicinity. The noise impact could be potentially significant in certain locations, but the impact would be reduced to *less than significant with mitigation*.

In summary, the noise generated during the construction and decommissioning phases of the VCIP projects would be temporary and could exceed applicable noise standards in certain locations. The impact would be potentially significant, but would be reduced to *less-than-significant with mitigation*.

Mitigation Measure NOI-1a: Noise Mitigation for Project Construction and Decommissioning

To reduce potential construction and decommissioning noise impacts resulting from VCIP implementation, the following mitigation measures are identified for application at the project-specific level, with applicability depending on the individual circumstances of each project, as follows:

- 1) **Implement Mitigation Measure TR-1. Mitigation Measure TR-1 specifies traffic volume reduction measures that would ensure that project traffic does not reduce Level of Service below LOS C on any roadways providing construction routes to VCIP projects.**
- 2) **Within the roadway segment of South San Mateo Avenue between West Carlson Avenue and West Conejo Avenue, no through-traffic for VCIP project construction or decommissioning shall be permitted on this roadway segment to maintain average daily noise at levels no greater than 3 dBA L_{dn} above ambient levels at the existing residences along this roadway segment. This measure shall be implemented and enforced in accordance with the traffic and truck routing plan prepared pursuant to Mitigation Measure TR-3.**

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- 3) Within the roadway segment of West Clarkson Avenue between South Stanislaus Avenue and South San Mateo Avenue no delivery truck or equipment traffic shall be permitted on this roadway segment in order to minimize traffic noise at the Cantua Elementary School and community. This measure shall be implemented and enforced in accordance with the traffic and truck routing plan prepared pursuant to Mitigation Measure TR-3.
- 4) Acoustical studies shall be required to be prepared for each VCIP project. These studies shall establish baseline noise levels and evaluate estimated project traffic distribution to calculate noise level increases due to project traffic, and also identify any additional traffic reductions required to maintain construction and decommissioning noise level increases to 5 dBA Ldn or less where noise levels with the project would remain below dBA Ldn, 3 dBA Ldn or less where noise levels with the project would range from 60 to 65 dBA Ldn, and 1.5 dBA Ldn or less where noise levels with the project would exceed 65 dBA Ldn.

Significance After Mitigation: Less-than-Significant Impact with Mitigation.

Implementation of item 1 would reduce overall construction and decommissioning traffic volumes by about 20 percent, which would reduce noise levels by about 1 dBA Ldn. Implementation of item 2 would limit daily construction and decommissioning traffic to less than 900 vehicles per day (approximately double baseline volumes) on S. San Mateo Avenue, which would result in noise level increases of less than 3 dBA Ldn along this road segment. Implementation of item 3 would maintain noise levels at or near baseline levels along this road segment and minimize construction traffic noise within the Cantua Creek community, including Cantua Elementary. Implementation of item 4 would ensure that all temporary noise increases due to VCIP construction and decommissioning traffic would be mitigated to acceptable levels.

Mitigation Measure NOI-1b: Noise Mitigation for Project Operations

To reduce potential operational noise impacts resulting from VCIP implementation, the following noise mitigation measures are identified for application at the project-specific level, with applicability depending on the individual circumstances of each project, as follows:

- 1) Noise generating equipment at each energy resource and infrastructure project site shall be located at the following setback distances from the nearest noise-sensitive land uses unless an acoustical analysis identifies feasible mitigation (defined below) to reduce noise produced by the equipment to 50 dBA L₅₀ at the location of any noise-sensitive land use:
 - a. Power Conversion Stations (PCSs): 60 feet from nearest receptor.
 - b. Battery Energy Storage System (BESS) with electrically powered HVAC system: 400 feet from nearest receptor.
 - c. Battery Energy Storage System (BESS) with water cooling system: 65 feet from nearest receptor.
 - d. Project Substation: 225 feet from nearest receptor.
- 2) Collection substations shall not be located within 400 feet of noise-sensitive land uses unless an acoustical analysis identifies feasible mitigation to reduce noise produced by collection substations to 50 dBA L₅₀ at the location of any noise-sensitive land use.

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Feasible mitigation would include, but not be limited to, noise barriers which shield project noise sources from nearby sensitive land uses and selection of quieter equipment. A noise barrier that interrupts the line-of-sight between the noise source and receptor would achieve a minimum 5 dBA reduction in noise. The use of noise barriers would reduce but not eliminate the minimum setback distances identified above, so some setback distance would likely still be required to meet the 50 dBA L_{50} noise limit. The acoustical studies required for each VCIP project would determine the combination of shielding and setback that would be appropriate for the proposed equipment and feasible in each case to meet the applicable noise standard.

Significance After Mitigation: Less-than-Significant Impact with Mitigation.

Impact NOI-2. Vibration

Implementation of the VCIP Energy Resource and Infrastructure Plans could result in generation of excessive groundborne vibration; however, vibration levels would be reduced to less-than-significant through application of specified vibration mitigation measures at the project-specific level. (*Less-than-Significant Impact with Mitigation*)

Groundborne vibration produced by construction activities would be considered significant if the vibration levels are high enough to damage structures (e.g., cosmetic damage) or cause substantial disturbance to people. Groundborne vibration levels would be highest during site preparation activities and when the solar arrays are installed, given that the cylindrical steel posts (or H-beams) will be driven into the ground using truck-mounted vibratory drivers.

Vibration is measured as PPV in inches per second. The California Department of Transportation (Caltrans) recommends a vibration limit of 0.5 in/sec PPV for new residential and modern commercial/industrial structures, 0.3 in/sec PPV for older residential structures, and a limit of 0.25 in/sec PPV for historic and some old buildings (Caltrans 2020). This analysis conservatively assumes that historic or old buildings could border the areas proposed for the installation of solar arrays and could possibly be damaged by construction activities. Therefore, regarding structures the applicable impact threshold for excessive groundborne vibration would be levels exceeding 0.25 in/sec PPV.

People can also be adversely affected by excessive vibration levels. The level at which humans begin to perceive vibration is 0.015 inches per second. Transient vibrations created by a single isolated vibration event at 0.2 inches per second are considered bothersome to most people, while continuous/frequent intermittent exposure to vibration is considered unacceptable at 0.10 inches per second as such vibration levels are considered strongly perceptible. Continuous/frequent intermittent construction vibration sources typically include impact or vibratory pile drivers and vibratory compaction equipment. Therefore, the applicable impact threshold for perceptible groundborne vibration would be 0.10 in/sec PPV.

The construction equipment having the greatest potential for vibration includes sonic pile drivers, vibratory rollers, and large bulldozers. The vibration levels typically produced by a sonic pile driver can reach 0.170 in/sec PPV at a distance of 25 feet. These levels conservatively represent the truck-mounted vibratory drivers that would be used to install the posts. Vibratory rollers and large bulldozers typically generate vibration levels ranging from 0.089 to 0.210 in/sec PPV at a distance of 25 feet.

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Vibration levels are highest close to the source and then attenuate with increasing distance from the source. Vibration levels at various distances can be calculated as follows:

$$PPV_{Equipment} = PPV_{Ref} (25/D)^n \text{ (in/sec)}$$

Where: PPV_{Ref} = reference PPV at 25 ft.

D = distance from equipment to the receiver in ft.

$n = 1.1$ (the value related to the attenuation rate through ground)

Table 4.13-6 shows the source levels for typical construction equipment and the minimum distances required to not exceed damage or perceptibility thresholds.

A review of Table 4.13-6 indicates that the equipment having the greatest potential to produce vibration levels exceeding the damage threshold would only yield such levels when used within 21 feet of historic or other old buildings. Strongly perceptible vibration levels could result when construction activities occur within 48 feet of sensitive receptors. In most instances, however, construction activities throughout the VCIP area would occur at far greater distances from buildings or receptors, and vibration impacts in areas outside of the screening distances would not be expected. However, if construction occurs within the screening distances identified in Table 4.13-6, then potential groundborne vibration impacts would be considered *less-than-significant with mitigation*.

TABLE 4.13-6
VIBRATION SOURCE LEVELS FOR CONSTRUCTION EQUIPMENT

Equipment		PPV at 25 ft. (in/sec)	Minimum Distance to Meet 0.25 in/sec PPV (feet)	Minimum Distance to Meet 0.10 in/sec PPV (feet)
Pile Driver (Sonic – typical range)		0.170	18	40
Clam shovel drop		0.202	21	46
Hydromill (slurry wall)	in soil	0.008	2	3
	in rock	0.017	3	5
Vibratory Roller		0.210	21	48
Hoe Ram		0.089	10	22
Large bulldozer		0.089	10	22
Caisson drilling		0.089	10	22
Loaded trucks		0.076	9	19
Jackhammer		0.035	5	10
Small bulldozer		0.003	1	1

Source: *Transit Noise and Vibration Impact Assessment Manual*, Federal Transit Administration, Office of Planning and Environment, U.S. Department of Transportation, September 2018, as modified by Illingworth & Rodkin, Inc., December 2024.

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Mitigation Measure NOI-2: Vibration Mitigation for Project Construction

To reduce potential construction vibration impacts and annoyance to residents resulting from VCIP implementation, (i.e., to maintain vibration levels at less than 0.1 PPV at buildings and sensitive receptors), the following vibration mitigation measures are identified for application at the project-specific level, with applicability depending on the individual circumstances of each project, as follows:

- 1) Avoid using sonic pile drivers, vibratory rollers, or dropping heavy equipment (e.g., clam shovel drops) within 50 feet of adjacent buildings.
- 2) Avoid using hoe rams, bulldozers, or drills within 25 feet of adjacent buildings.
- 3) Substitute smaller equipment to complete the tasks designated for vibratory equipment within 50 feet of sensitive receptors.
- 4) Provide construction notification. Notice shall be mailed no less than 15 days prior to construction to all residents, property owners, businesses, and public agencies that have facilities within 500 feet of the project area. The notice shall state the type of construction activities that will be conducted, the location and duration of construction, and contact information for the project Disturbance Coordinator.
- 5) Designate a Disturbance Coordinator responsible for registering and investigating claims of excessive vibration. The contact information for the Disturbance Coordinator shall be posted on the construction site.

Significance After Mitigation: Less-than-Significant Impact with Mitigation.

Impact NOI-3. Exposure to Aircraft Noise

Implementation of the VCIP Energy Resource and Infrastructure Plans would not result in exposure of workers at VCIP project sites to excessive noise levels from aircraft operations at airports or airstrips in the vicinity. (*Less-than-Significant Impact*)

The predominant source of aircraft noise in the vicinity of the Plan Area is NASL, which is located approximately 9 miles southeast of the Five Points community. Noise produced by NASL aircraft operations primarily affect the noise environment at the southeast portion of the Plan Area within the NASL flight pattern that is mapped in the Fresno County Airport Land Use Compatibility Plan (Fresno COG 2023, Exhibit K3) as land subject to noise levels between 60 dBA CNEL and 85 dBA CNEL. Specifically, VCIP sites proposed south of Mt. Whitney Avenue, east of Lassen Avenue (SR 269), and north of W. Dorris Avenue (SR 198) would be exposed to NASL noise levels exceeding 60 dBA CNEL. The proposed solar, BESS, and infrastructure facilities are not considered noise-sensitive land uses. Aircraft overflights would expose construction workers in the affected area to noise levels exceeding 60 dBA CNEL; however, construction workers would be required to wear adequate hearing protection. The hearing protection required to reduce noise levels from local construction activities and equipment to safe levels would be sufficient to also reduce noise levels from NASL aircraft operations to safe levels. Therefore, VCIP implementation would not expose workers to excessive noise levels from aircraft operations at NASL, and as such, the impact of any VCIP project's exposure to excessive aircraft noise would be *less than significant*.

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There are also four public airports within or adjacent to the Plan Area that experience sufficient aircraft activity to warrant noise contours as mapped in the Fresno County Airport Land Use Compatibility Plan for the Coalinga Municipal, Firebaugh, Harris Ranch, and William Robert Johnston (Mendota) airports. The aircraft activity at these four airports is limited, and as such, the noise contours generated by these airports often do not extend beyond the boundary of the individual airport. Based on a review of the noise contour maps prepared for each of these airports (Fresno COG 2023, Attachment A Displacement Analysis Figures A18, A19, A22, and A26), areas proposed for the potential development of solar facilities are a minimum of two miles from the 60 dBA CNEL contours produced by each of these public airports. The contemplated VCIP solar and energy storage facilities are not considered noise-sensitive land uses, and aircraft overflights would not expose construction workers or operations staff to noise levels exceeding 60 dBA CNEL. Therefore, implementation of the VCIP would not expose workers on VCIP facility sites to excessive noise levels from aircraft operations, and as such, the impact would be *less than significant*.

There are also six private airstrips distributed throughout the Plan Area, and another five airstrips within five miles of the Plan Area. Aircraft operations at private airstrips are infrequent in nature, and involve small aircraft, and as such, would not expose people at VCIP facilities to excessive noise levels. Therefore, *no impact* would occur within the Plan Area due to noise generated by private airstrips in the vicinity.

In summary, the impact resulting from the exposure of people at VCIP facilities to noise from aircraft operations associated with a private airstrip or public airport or public use airport would be *less than significant*.

Mitigation Measures: No mitigation is required.

4.13.3.2. TRANSMISSION CORRIDORS OUTSIDE THE VCIP

The transmission corridors for delivery of solar generation from potential VCIP projects to urban electricity markets in northern and southern California have been identified at a conceptual level in this PEIR to allow a general discussion of environmental impacts associated with transmission line development for informational purposes. These transmission delivery corridors extend far beyond the District's boundaries and are not part of the proposed VCIP. Planning and approval of these outside transmission lines are under the jurisdiction of the state and federal energy regulatory agencies, public utilities, and cities and counties traversed by the transmission corridors. The following discussion provides an overview of potential impacts of the outside transmission lines with respect to noise.

Construction of the outside transmission lines would generally involve the following steps: clearing of right-of-way and staging areas; installation of tower footings and structures; and conductor stringing. Since the transmission corridors are planned to run parallel to existing transmission lines, construction access would be obtained from existing access roads, and the need for new access roads would be limited. The construction activities would proceed in a stepwise fashion from one end of each 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,

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auger drill rigs, and trucks, which produce maximum noise levels ranging from 80 to 85 dBA at 50 feet. Helicopters would be used for stringing pilot wires for conductors, and could also be used for assembly of lattice towers in the mountainous segments of the transmission corridors. The operation of a helicopter for construction would generate maximum noise levels of approximately 80 dBA at 200 feet (USBLM 2016, p. 3.23-11).

The outside transmission corridors generally pass through sparsely settled rural areas with few sensitive receptors in the immediate vicinity. However, there may be instances where the transmission construction would occur in proximity to existing rural residences and possibly other sensitive receptors. At those locations, the residents would be temporarily subject to construction noise for several days at any given location. The noise limits applicable to construction noise vary by county. All affected counties limit construction activity to daytime hours, and some counties (e.g., Fresno, Merced) otherwise exempt construction from noise standards. Some other counties (e.g., Kings, Kern, Monterey) do not exempt construction noise from their general noise standards, while Los Angeles County regulates construction noise but applies higher limits on construction noise than operational noise (Fresno Co. 2024i; Merced Co. 2025a; Kings Co. 2025c; Kern Co, 2025a; Monterey Co. 2025e; LA Co. 2025a).

In the absence of a common noise standard for transmission construction, a conservative approach would be to apply a maximum noise metric of 70 dBA, which is the noise limit applied to general noise sources by Fresno County and most other counties. Receptors within about 300 feet of transmission construction would be subject to maximum noise levels of 70 dBA or greater during the height of construction activity. However, it is expected that transmission towers would be planned to be located at greater distances from existing residences to avoid noise and visual impacts. Although transmission construction would be audible from greater distances, the more intense activity and resulting noise levels would occur intermittently and would be temporary, lasting for several days at any given tower location. Preparation of tower sites may produce some vibration from drilling and compacting equipment, but these activities would be brief and several hundred feet from the nearest receptor. Similarly, conductor stringing by helicopter would be brief and distant from any receptor location. Therefore, the potential noise impacts due to the construction of the outside transmission lines are not anticipated to be significant.

4.13.3.3. CUMULATIVE IMPACTS

As discussed under Impact NOI-1, the potential for noise level increases would be greatest during construction, with the primary noise sources being construction activity at the VCIP project sites, and traffic generated by construction workers and trucks delivering materials and equipment. Project construction noise would vary from place to place as construction proceeds, so noise level increases at sensitive receptor locations would be intermittent and temporary. Traffic generated during project construction would result in increased ambient noise levels along the affected roadways, although the increased traffic volumes on any given roadway would be highest during the peak daily periods and would be temporary at any given location as the focus of VCIP development proceeds from north to south through the Plan Area. The traffic noise levels are estimated to exceed the applied noise criteria along travel routes in Mendota and Firebaugh in 2029, and in Cantua Creek in 2031. However, it is expected that the traffic reduction measures required for VCIP construction would reduce traffic volumes substantially, and that the resulting noise levels at the most affected sensitive receptor locations would be reduced to meet the applicable noise standards. Traffic noise levels are anticipated to

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remain within the applicable noise limits on all other roadways during the latter VCIP buildout years. Noise levels generated by operational VCIP traffic would be lower and would not exceed applicable noise standards.

During construction, noise generated at the VCIP project sites could potentially combine with noise generated by other approved and pending projects in the vicinity and result in cumulatively higher noise levels. There are three cumulative solar projects that have been approved but have not yet been constructed and two solar projects pending approval that could contribute to a cumulative noise effect. These include the approved Luna Valley, Sonrisa, and Darden solar projects, and the pending Heartland and ICF Rosemary solar projects. However, as noted in Section 4.0.5. *Cumulative Impacts* and elsewhere, four of these projects (Sonrisa, Darden, Heartland, and ICF Rosemary) are located in VCIP DFAs. Since the plan level impacts of the DFAs, including these projects, are addressed in the main impact analysis sections of this PEIR, they are not duplicated in the cumulative analyses. However, for informational purposes only, the following cumulative analysis of noise impacts includes these four projects.

It is anticipated that potential VCIP solar projects would commence construction in 2030 at the earliest. The five cumulative solar projects in the vicinity would likely be constructed and fully operational by 2030. Therefore, it is unlikely that the construction of the VCIP projects would overlap with the construction of these cumulative solar projects. There are no other current or foreseeable projects in the vicinity of VCIP DFAs which would be under construction at the same time as the VCIP projects. In the unlikely event that construction of the VCIP projects were to overlap with any other nearby projects, the noise increases at the nearest common receptors would be negligible. This is because none of these other cumulative projects are within one mile of both a potential VCIP project and a sensitive receptor, and because noise levels drop rapidly from the source and would be negligible at greater distances. Therefore, the cumulative noise impact associated with the VCIP projects would be *less than significant*, and the contribution of VCIP projects, individually and collectively, to cumulative noise level increases *would not be considerable*.

Regarding noise from construction traffic, the only other projects that could contribute substantial construction traffic within the Plan Area are the five large solar projects mentioned above; however, those solar projects are anticipated to be completed prior to the 2030 when the construction of VCIP projects in the vicinity of those five projects would be expected to begin. Thus, those other solar projects would only generate very light volumes of operational traffic at the same time as any VCIP projects in the vicinity under construction, and thus would not appreciably increase traffic noise levels along the travel routes used by VCIP construction traffic. Other approved and pending projects in the Plan Area would be too small and too distant from potential VCIP projects to result in a substantial increase in traffic noise along any common travel routes. Moreover, these projects would likely be completed before substantial construction of any VCIP project commences. Although VCIP construction traffic would result in noise level increases on a few road segments in the initial construction years, it is anticipated that the traffic reductions required to relieve traffic congestion under MM TR-1 would also reduce noise levels at all receptor locations, while additional noise measures in MM NOI-1 would reduce remaining noise impacts to less-than-significant. Therefore, the combined increases in traffic noise levels from the construction of the VCIP projects and other *cumulative projects would be less than significant*, and the project *contribution would not be considerable*.

During VCIP project operations, the potential noise impacts to adjacent sensitive receptors would have been reduced through project design measures such as specified setbacks from noise-generating equipment like BESSs, PCSs, and project substations, and related traffic would be very light. Thus, project operations would not generate excessive noise levels at any receptor location and would not generate noise levels that would be audible at any receptor location. It is expected that similar operational noise conditions would prevail at any

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adjacent and nearby solar/BESS facilities, such that combined operational noise sources would not result in higher noise levels that would exceed applicable standards. Therefore, the incremental noise impacts from the combined operation of the VCIP facilities and other *cumulative projects would be less than significant*, and the project *contribution would not be considerable*.

Construction activities at the potential VCIP projects would result in ground vibration. However, mitigation measures identified in MM NOI-2 would reduce potential vibration to less than significant for VCIP projects. Additionally, construction activities resulting in perceptible vibration would be short in duration, lasting a few days at most at any given location within project construction sites. Other cumulative projects would generate vibration during construction, but given the very short attenuation distance for vibration, and the general absence of cumulative projects in the immediate vicinity of potential VCIP projects expected during the VCIP construction period, there would not be a cumulative vibration effect. Therefore, the combined vibration from construction of the cumulative projects would be *less than cumulatively significant*, and the project *contribution would not be considerable*.

The outside transmission lines would result in increased noise levels during construction. Since the transmission corridors pass through rural areas, the cumulative development would mainly consist of dispersed residential development pursuant to general plan and zoning regulations of each affected county. The noise from this cumulative development would be minor and would not combine with noise increases from transmission line construction to result in significant cumulative noise impacts.

In summary, the noise and vibration impacts associated with VCIP implementation, combined with the noise and vibration impacts from the other cumulative projects, would not result in a cumulatively significant noise and vibration impact. Therefore, the *cumulative impact would be less than significant*, and the *contribution from VCIP projects would not be cumulatively considerable*.

4.13.4. References – Noise

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LA County 2025a	County of Los Angeles. <i>Los Angeles County Code of Ordinances</i> . As of January 2025. https://library.municode.com/ca/los_angeles_county/codes/code_of_ordinances
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Merced Co. 2025a	County of Merced. <i>Merced County Code of Ordinances</i> . As of January 28, 2025. https://ecode360.com/ME4967
Monterey Co. 2025e	County of Monterey. <i>Monterey County Code of Ordinances</i> . As of April 15, 2025. https://library.municode.com/ca/monterey_county/codes/code_of_ordinances
USBLM 2016	U.S. Bureau of Land Management (BLM). October 2016. <i>Final Supplemental Environmental Impact Statement for the Gateway West Transmission Line Project</i> . https://eplanning.blm.gov/public_projects/nepa/39829/84776/101489/Main_Text_Gateway_West_Final_SEIS.pdf
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4.14. POPULATION AND HOUSING

This section includes the following discussion and analysis related to: existing physical and regulatory setting; criteria and methodology for evaluating impacts; and results of the impact assessment, including identification of potentially significant impacts and corresponding mitigation measures to avoid or substantially lessen such impacts to the extent feasible. The District received no scoping comments pertaining to population and housing (see Scoping Report in Appendix A of this document).

4.14.1. Environmental Setting

Population

As part of its regional planning functions, the Fresno Council of Governments (FCOG) develops regional population, employment, and housing forecasts for Fresno County (County) and the incorporated cities within the County. FCOG prepares a regional growth projection for the County as part of its recurring update to the Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) (Fresno COG 2022b). The County 2024 General Plan, designed to accommodate County population growth projected through 2042, relies on FCOG's projections. It forecasts an increase of 24,607 people in the County's unincorporated areas during this period, with approximately 96 percent of expected population growth to occur within incorporated city spheres of influence (Fresno County 2024b). FCOG projects that the population in Fresno County is expected to grow by 170,290 people between 2025 and 2050 (an annual average increase of 0.6 percent), with the total population in the Fresno region in 2050 projected to be just under 1.24 million (Fresno COG 2022a). The Cities of Fresno and Clovis are expected to capture the most growth, along with certain unincorporated areas of the County. However, the General Plan does not anticipate substantial growth in designated "Rural Settlement Areas," which consist of small unincorporated residential settlements surrounded by agriculture and other open space uses (e.g., Cantua Creek).

Education and Employment

Education levels for Fresno County residents lag behind those of California as a whole and the United States. Only approximately 21.2 percent of persons 25 years of age and older in Fresno County have a bachelor's degree or higher, compared with 33.9 percent for the state and 32.1 percent for the nation. 24 percent of residents have less than a high school education in contrast to 16.7 percent for the state and 12 percent for the nation (Fresno COG 2022b). In March 2025, the unemployment rates in the five counties in the VCIP region were as follows: Fresno – 9.0 percent; Kings – 10.0 percent; Madera – 8.5 percent; Merced – 11.3 percent; and Tulare – 11.4 percent; compared to 5.3 percent for California and 4.2 percent for the United States (EDD 2025a, 2025b).

Housing

According to the County's Draft Housing Element, Fresno County had a total population of approximately 1,011,499 in 2022. More than half of the countywide population resides in the City of Fresno. The unincorporated area has the next-largest population of 158,846, followed by the city of Clovis with a population of 124,523. The remaining cities have populations of about 26,000 or less. In 2022, there were 343,512 housing units in the County, of which 70.3 percent were single family, 25.4 percent were multifamily, and 4.3 percent

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were mobile homes. The unincorporated area had the highest percentage of single-family homes in 2022 (82.9 percent) and mobile homes (11.7 percent), with Huron having the lowest portion of single-family homes at 38.3 percent. In terms of County-wide housing tenure, 53.7 percent of housing units were owner occupied, with the remaining 46.3 percent renter occupied in 2020. In the unincorporated area of the County, 68.9 percent of units were owner-occupied and 31.1 percent were renter occupied (Fresno COG 2023). The overall housing vacancy rate in the County was 5.8 percent in 2022, with the unincorporated areas having the highest vacancy rate at 12.2 percent, compared to vacancy rate of 3.8 percent in the City of Fresno, and vacancy rates ranging from 2.0 percent to 8.1 percent in other incorporated cities in the County (Fresno COG 2023).

4.14.2. Regulatory Context

Federal

There are no federal plans, policies, regulations, or laws pertaining to population and housing that are applicable to the VCIP.

State

California Housing Element Law (Housing Element Law)

California's Housing Element Law (California Government Code sections 65580–65589.8) recognizes that “early attainment of decent housing and a suitable living environment for every Californian, including farmworkers, is a priority of the highest order.” The Housing Element Law was enacted to ensure that counties and cities recognize their proportionate responsibilities in contributing to the attainment of state housing goals, to establish the requirement that all counties and cities adopt housing elements to help meet state goals, to recognize that each locality is best capable of determining what efforts it is required to take to contribute to attainment of state housing needs, and to encourage and facilitate cooperation between local governments to address regional housing needs. Government Code section 65583 states: “The housing element shall consist of an identification and analysis of existing and projected housing needs and a statement of goals, policies, quantified objectives, financial resources, and scheduled programs for the preservation, improvement, and development of housing. The housing element shall identify adequate sites for housing, including rental housing, factory-built housing, mobile homes, and emergency shelters, and shall make adequate provision for the existing and projected needs of all economic segments of the community.”

Fresno County

Fresno County General Plan (General Plan)

While the Fresno County General Plan (Fresno County 2024b) does not contain policies on population and housing that are relevant to implementation of the proposed VCIP, the following General Plan provisions are provided for informational purposes.

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General Plan Themes

Agricultural Land Protection

“The plan seeks to protect its productive agricultural land as the county’s most valuable natural resource and the historical basis of its economy through directing new urban growth to cities and existing unincorporated communities and by limiting the encroachment of incompatible development upon agricultural areas.”

Growth Accommodation

“The plan is designed to accommodate population growth through the year 2042 consistent with the forecasted projection of 234,591 people in the unincorporated County by 2042. This represents an additional population of approximately 24,607.”

Urban-Centered Growth

“The plan promotes compact growth by directing most new urban development to incorporated cities and existing unincorporated urban communities where public facilities and infrastructure are available or can be provided consistent with the adopted General Plan or Community Plan to accommodate such growth. This plan assumes approximately 96 percent of new population growth and new job growth will occur within incorporated city spheres of influence and 7 percent would occur in unincorporated areas. Accordingly, this plan prohibits designation of new areas as Planned Rural Community and restricts the designation of new areas for rural residential development while allowing for the orderly development of existing rural residential areas.”

Land Use and Agriculture Element

E. Non-Agricultural Rural Development

“The vast majority of Fresno County’s rural area is designated for agricultural, rangeland, or open space uses. However, the General Plan also designates rural land for four types of rural development that are primarily residential in character: Rural Residential, Foothill Rural Residential, Rural Settlement Areas, and Planned Rural Communities. Although Rural Residential designations exist, this plan restricts the designation of additional areas for such development. This restriction is because there is already a large inventory of vacant rural residential lots, additional rural residential development is not needed to accommodate projected unincorporated growth, and rural residential development has environmental and service impacts that can and should be avoided. Rural Settlement Areas, which consist of small unincorporated residential settlements surrounded by agriculture and other open space uses, have experienced little growth since their early founding. Substantial population growth in these areas is not anticipated in the future. . . . Policies in this section provide for appropriate development in rural areas by directing development away from productive and potentially productive agricultural areas, limiting expansion of existing designated rural residential areas, and minimizing the environmental and service impacts of continued development within areas already designated for rural development.”

Fresno Council of Governments

FCOG is an association of local governments from including the County of Fresno and the incorporated cities within the county. FCOG is mainly responsible for transportation planning and programming for the region. FCOG is also responsible for and oversees the Regional Housing Needs Allocation (RHNA), a process mandated by California state law that requires each city and county to have land zoned to accommodate a fair share of the

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regional housing need. The County must facilitate housing production by ensuring that land is available and that unnecessary development constraints have been removed. The 2023-2031 Housing Element Update shows how the County will accommodate the RHNA (Fresno COG 2023).

Kings County¹

The proposed VCIP would only be implemented in Fresno County and would therefore not be subject to the jurisdiction of Kings County. However, the Plan Area borders Kings County, and multiple jurisdictions within Kings County (e.g., the Cities of Lemoore, Hanford, Avenal, and Kettleman City) are in the vicinity of the Plan Area. Therefore, information related to population and housing in Kings County that may be relevant to VCIP implementation is provided for informational purposes.

Kings County General Plan

The Kings County General Plan (Kings County 2010a) contains the following policies related to population and housing that may be relevant to implementation of the proposed VCIP.

Land Use Element

The Land Use Element of the Kings County General Plan “designates the general distribution, location and intensity of land uses throughout the unincorporated territory of the County, and establishes land use policies to guide and direct future land use decisions and development” (Kings County 2010a). Regarding population and housing, “[t]he *Land Use Element* remains consistent with the County’s overarching priorities to protect prime agricultural land, direct urban growth to existing cities and community districts, and increase economic and community sustainability. General Plan land use designations and policies are designed to encourage compact and community centered development patterns that lower public service costs, make more efficient use of land, and discourages premature conversion of farmland to other uses” (italics in original) (Kings County 2010b). Specifically, Kings County has several land use goals and policies related to lands designated “Agriculture Open Space,” which protect agricultural lands throughout Kings County and prevent the premature development of incompatible urban uses.

The Kings County General Plan “has taken into consideration each of the four incorporated City (Avenal, Corcoran, Hanford, and Lemoore) General Plans, and their associated policies and planned directions for growth” (Kings County 2010b). These incorporated cities “provide municipal type services to approximately 77% of the Countywide total population,” and Kings County “policy continues to direct urban growth to the Cities.” The land use elements goals and policies related to “Urban Fringe” within these cities respective spheres of influence ensure logical and orderly growth in these urban fringe areas based on the provision of available services and in compliance with Kings County’s land use policies regarding “Agriculture Open Space.”

The land use element similarly restricts development in Kings County’s four “Community Districts,” which are based on the county’s “four unincorporated communities of Armona, Home Garden, Kettleman City, and Stratford.” Development in these Community Districts, which “hold the most potential for accommodating

¹ For informational purposes, brief descriptions are provided of general planning documents and growth projections in Kings, Merced, and Madera Counties, to provide further context in evaluating whether implementation of the proposed VCIP would induce substantial unplanned population growth in the area.

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urban growth within the unincorporated territory of the County . . . must be in done in accordance with County zoning, building, and subdivision ordinances and County Improvement Standards,” as well as the county’s land use element policies for Agriculture Open Space.

2024-2032 Kings County Housing Element Update

The 2024-2032 Kings County Housing Element update is a cooperative effort of Kings County and the Cities of Avenal, Corcoran, Hanford and Lemoore (Kings County 2024). This multi-jurisdictional housing element update is and is part of and consistent with each jurisdiction’s general plan. It plans for the addition of 9,429 Regional Housing Allocation Needs (RHNA) units within these jurisdictions during the 2024-2032 planning period. This development would be concentrated in the Cities of Hanford (5,547 units) and Lemoore (3,329 units) and would occur on sites with adequate public services pursuant to policies that promote efficient and logical (e.g., infill) development.

The multi-jurisdictional housing element, relying on each jurisdiction’s general plan and relevant data provides the following information regarding each city’s population growth and housing:

Avenal: “The General Plan estimates Avenal’s population to grow from 13,696 in 2020 to an estimated 16,050 persons by the year 2035. Growth has been located within the present City boundary and concentrated in a northwest to southeast direction, and this trend is projected to continue.”

Corcoran: “Corcoran’s population increased 71.62% to 24,813 between 2000 and 2010 and decreased by about 10% between 2010 to 2020 to 22,339. Corcoran is currently growing at a rate of 0.33% annually and it is expected that the overall growth rate will be less than 1% annually.”

Hanford: “Hanford General Plan projects an average annual growth rate of 2.1% till 2035, after taking into account a likely faster growth rate in the cities of Kings County. Between 1990 and 2020, Hanford experienced around 90% growth to its 1990 population. However, Hanford experienced <1% overall growth between 2010 and 2020. Therefore, the assumption of 2.1% annual growth in the General Plan is optimistic and should be more than sufficient to meet any future demand.”

Lemoore: “Lemoore has been growing at a rate of less than 1 percent per year, with residential developments mostly single-family homes and multi-family condominiums in the northeast and western quadrant of the city planning area.”

Unincorporated Kings County: “The unincorporated areas of Kings County have been experiencing a decline in population since 2000, with a decline of 12% between 2000 and 2010 and a decline of 8% between 2010 and 2020. It is not expected that this trend will reverse significantly in the near future. The General Plan has earmarked 1073 acres of land designated for very low density (RRE/RRA), 324 acres for low density (R-1-20), 163 acres of Low Medium Density (R-1-12), 667 acres of Medium Density (R-1-8 or R-1-6), 226 acres of Medium High Density (RM-3), 83 Acres of High Density (RM-2) and 15 acres of very high density (RM-1.5). There are also 38 acres of Downtown Mixed Use (MU-D) designated land, 86 acres of Mixed Use (MU) land and 34 acres of Reserve Mixed Use (MU-(R)). There is sufficient vacant land available to meet future growth.”

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Merced County (Provided Solely for Informational Purposes)

The proposed VCIP would only be implemented in Fresno County and therefore would not be subject to the jurisdiction of Merced County. However, as areas of Merced County are within 50 miles of the northern Plan Area and would be part of the regional labor pool for the VCIP, potentially relevant Merced County policies related to population and housing are provided for informational purposes.

The 2030 Merced County General Plan (Merced County 2013) serves as its blueprint for all future land use, development, preservation, and resource conservation decisions. The Merced County General Plan has substantially similar policies to those described regarding Fresno County and Kings County. These policies, among other things, direct urban development to areas within the adopted boundaries of cities, minimize conflicts between agricultural areas and urban land uses, and ensure orderly expansion in urban fringe areas of incorporated cities.

Between 2025 and 2040, Merced County's total population (incorporated and unincorporated) is projected to increase by approximately 32,000 people, reflecting an overall increase of 10.7 percent or an average annual growth rate of 0.75 percent over the 15- year period (CDOF 2024). It is expected that most of this growth will occur in the incorporated cities and unincorporated communities in Merced County.

Madera County (Provided Solely for Informational Purposes)

The proposed VCIP would only be implemented in Fresno County and therefore would not be subject to the jurisdiction of Madera County. However, as areas of Madera are within 50 miles of the northeastern Plan Area and would be part of the regional labor pool for the VCIP, potentially relevant Merced County policies related to population and housing are provided for informational purposes.

The Madera County General Plan has substantially similar land use policies as the jurisdictions described above. These policies, among other things, ensure that new development is centered in existing communities and designated growth areas and facilitate orderly patterns of development based on the efficient and timely provision of infrastructure and services (Madera County 1995).

Between 2025 and 2040, Madera County's total population (incorporated and unincorporated) is projected to increase by approximately 3,500 people, reflecting an overall increase of 2.2 percent or an average annual growth rate of 0.15 percent over the 15-year period (CDOF 2024). It is expected that most of this growth will occur in the incorporated cities and unincorporated communities in Madera County.

[For additional information regarding the regional planning documents, see Section 4.0.5.5, "Summary of Projections."]

4.14.3. Environmental Impact Analysis

METHODOLOGY

This section analyzes the potential for implementation of the VCIP to result in significant impacts related to population and housing, based on a review of applicable general plans, regional planning documents, zoning ordinances and maps, statistical data, and other relevant documents. The proposed VCIP Energy Resource and Infrastructure Plans were considered in the context of existing and planned population growth in the vicinity of the Plan Area for consistency with applicable projections, plans, and/or policies.

SIGNIFICANCE CRITERIA

Based on Appendix G of the CEQA Guidelines, implementation of the VCIP would be considered to result in a significant impact related to population and housing if it would:

- a. Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).
- b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.

4.14.3.1. DIRECT AND INDIRECT EFFECTS

Impact PH-1. Induce Substantial Unplanned Population Growth in the Area

Implementation of the VCIP Energy Resource and Infrastructure Plans would not induce substantial unplanned population growth in the area, either directly or indirectly. (*Less-than-Significant Impact*)

CEQA defines population impacts to include changes to the location, distribution, density, or growth rate of the human population in comparison to existing projections and policies regarding future development in the relevant area (Fresno COG 2022). The potential VCIP energy and infrastructure facilities would not include residential components, so they would not directly induce population growth in the Plan Area or its vicinity.

For VCIP implementation, most employees would consist of construction workers. Given the high unemployment rate in the region (i.e., 9.0% in Fresno County, and 8.5 to 11.4% in the surrounding valley counties), it is expected that construction workers would be drawn from the local labor pool and that few workers would migrate to the area (EDD 2025a, 2025b). The construction workforce would vary throughout the VCIP buildout period, with the peak workforce estimated to be about 6,000 workers. Due to Fresno County's existing conditions of steady population growth, coupled with high unemployment and low educational attainment rates, it is expected that there will be a high local demand for these construction jobs (Fresno COG 2022). Pursuant to AB 2661 (2024), the District will also establish a community benefits plan for the VCIP that, among other things, will prioritize

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job creation and training programs for local residents. These benefits will further attract local workers. Therefore, the vast majority of construction workers are expected to be drawn from the existing labor pool in the region. Employing these local workers would not directly result in population growth. It is reasonably foreseeable that a small percentage of construction workers may be brought in from outside the region. Employing these workers would not directly induce population growth because this employment would be short-term and would therefore not be expected to result in relocation. If these workers are employed, they would be given a per diem sufficient to afford a motel room or other existing short-term housing options. This would ensure that their temporary presence in Fresno County would be consistent with existing policies and projections and would not result in any unplanned growth.

Operations staffing would also vary from day to day, and would consist of few permanent staff, along with temporary workers who would come to each facility as needed to perform maintenance, repairs, panel cleaning, and other duties. Upon full buildout of the VCIP, it is estimated that about 840 permanent staff would be employed at VCIP solar and energy storage facilities (i.e., 84 solar/BESS facilities X 10 permanent staff each = 840). It is expected that all operations staff would be drawn from the surrounding region, and in cases where workers would relocate to the region from elsewhere, it is anticipated they would find ample housing choice from the existing inventory of homes and rental units in the region. In addition, part-time maintenance workers for panel cleaning and vegetation management would visit the facilities for limited periods, and would average five additional workers on any given day, for a VCIP total of 420 daily workers on average. These workers would be generally unskilled and are expected to be drawn entirely from the local labor pool. Thus, while some permanent operations staff may be drawn from outside the region for employment opportunities at the VCIP facilities, the overall numbers are expected to be negligible and would not induce substantial population growth in the area.

Based on 2020 census data, there were over 11,500 rental units on the market in the five counties surrounding the VCIP (i.e., within an approximately 50-mile radius of the Plan Area). It is expected that the availability of rental housing will keep pace with regional growth to result in an adequate supply of rental units to meet any incremental demand resulting from VCIP development commencing in 2029 (U.S. Census 2020). Therefore, little if any population and housing growth is anticipated to be induced by VCIP development. Because any growth would be consistent with projected regional growth, any impacts associated with this potential population and housing growth would be less than significant.

VCIP energy and infrastructure development would not result in the extension of 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 Fresno County. Therefore, VCIP development would not induce indirect growth through extension of urban infrastructure.

As demonstrated in Section 4.14.2 (Regulatory Context) and Section 4.0.5.5 (Summary of Projections), the potential for “unplanned” growth has long been avoided by the preparation and implementation of robust general plan documents at the county and local level. It is the purpose of all general plans to forecast community growth within the “planning horizon” (usually 20 years) and to designate areas to accommodate the anticipated land uses (Fresno County 2024b; Merced County 2013). A major purpose of city general plans is to define the urban limit line or planning boundary for the future growth planned in the General Plan. The purpose of County general plans is to similarly define the limits of unincorporated communities within their jurisdiction. The objectives of both city and county general plans is to confine urban growth to existing urban areas and limit growth in rural areas (Fresno County 2024b; Kings County 2010b). Because any growth would be required to be

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consistent with local general plans, as implemented through local zoning ordinances and permit requirements of the surrounding counties and cities, no unplanned growth would occur and any impacts associated with the insubstantial potential population and housing growth resulting from VCIP implementation would be less than significant. [The potential for VCIP development to result in growth inducement is addressed in further detail in Section 6.2. *Growth-Inducing Effects of the Proposed Project.*]

Mitigation Measures: No mitigation is required.

Impact PH-2. Displace Substantial Numbers of Existing People or Housing

Implementation of the VCIP Energy Resource and Infrastructure Plans would not displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere. (*Less-than-Significant Impact*)

Under CEQA, housing impacts relate to alterations in existing housing or the creation of demand for additional housing (FCOG 2022). There are numerous dwellings within the Plan Area, the vast majority of which would not be directly affected by VCIP energy or infrastructure projects. The vast majority of the DFAs are absent of existing dwellings. The exceptions are two dwellings in the northern portion of the Plan Area that would likely be removed for VCIP solar and energy storage projects. The backbone transmission line includes no dwellings within the planned corridor alignment or nearby, and it is expected that the gen-tie corridors would also avoid existing dwellings.

The two dwellings that would likely be removed for VCIP development are owned by the District and rented out on a month-to-month basis. The existing tenants would be provided with ample advance notification of the termination of their leases by the District. It is anticipated that the tenants would find replacement housing among the many units available in the general area. Based on 2020 census data, there were 11,542 rental units on the market in the five counties surrounding VCIP (i.e., within an approximately 50-mile radius of the Plan Area) (U.S. Census Bureau 2020). Based on the current regional population growth rate of approximately 1 percent per year, it is expected that the availability of rental housing will keep pace with regional growth to result in an adequate supply of rental units to meet any incremental demand resulting from VCIP development commencing in 2029. As such, construction of replacement housing for these tenants would not be necessary. Therefore, VCIP implementation would not result in substantial displacement of housing necessitating construction of replacement housing elsewhere, and the impact would be *less than significant*.

Mitigation Measures: No mitigation is required.

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4.14.3.2. TRANSMISSION CORRIDORS OUTSIDE THE VCIP

Transmission corridors for delivery of solar generation from VCIP projects to urban electricity markets in northern and southern California have been identified at a conceptual level in this PEIR to allow a general discussion of environmental impacts associated with transmission line development in these corridors for informational purposes. The delivery transmission lines would pass through the unincorporated areas of ten counties to the north, west and south of the Plan Area.

The delivery transmission corridors extending outside the Plan Area to regional load centers would have a total length of approximately 348 miles and would pass through 10 counties (see Figure 2.4-1). The transmission lines would be constructed over a five-year period and would involve a total of approximately 200 construction workers organized into several crews.

Induce Substantial Unplanned Growth in the Area

The outside transmission lines would not include residential components, so they would not directly induce population growth in the vicinity of the outside transmission corridors. The construction workforce would be drawn from the existing labor pools along the transmission routes, and would likely include some specialized workers who would use accommodations proximate to the work sites as they progress along the transmission corridors. Due to the temporary nature of the transmission construction projects and the constant movement of construction activity from place to place, workers would not permanently relocate to be near the job site, and no increased demand for housing would be induced.

The outside transmission lines would not result in the extension of roads or urban utilities (e.g., water and sewer) to lands not currently served by urban infrastructure, and thus would not induce unplanned urban development into the rural areas traversed by the transmission corridors. Also, since the transmission lines are intended for bulk transmission, the electricity conveyed would not be available to serve electrical demand along the transmission lines. Moreover, electricity supplies are not locally constrained, and the purpose of the outside transmission lines is to facilitate delivery of renewable power as a replacement for fossil-based generation, and not as a new source of power to serve urban growth. Therefore, VCIP development would not induce indirect growth through extension of urban or electrical infrastructure. [The potential for VCIP development to result in growth inducement is addressed in further detail in Section 6.2. *Growth-Inducing Effects of the Proposed Project.*]

Displace Substantial Numbers of Existing People or Housing

The routing of the outside transmission corridors follows existing transmission lines through rural areas where there are few existing dwellings. The potential corridors have been identified specifically to avoid individual rural dwellings, and although the transmission lines would pass within the vicinity of existing rural dwellings and residential areas, no dwellings have been identified which would require removal to accommodate an outside transmission line. Therefore, the construction of the outside transmission lines would not result in the displacement of substantial numbers of existing people or housing and the impact would be *less than significant*.

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4.13.3.3. CUMULATIVE IMPACTS

As discussed in Section 4.0.5.3., there are 68 cumulative projects in the Plan Area or within 10 miles of the Plan Area.² Of this total, 53 projects are solar, BESS, or substation projects (39 of which have been completed and are operational), eight are industrial or agricultural processing facilities, three are commercial centers, and four are residential developments.

Induce Substantial Unplanned Growth in the Area

During construction, all of the cumulative projects have or will temporarily employ construction workers, the vast majority of whom would be drawn from the existing regional labor pool and would not require new housing, although a few may reside outside the region and need temporary accommodation. During operations, the solar, BESS and substation projects would require relatively small staffs who would also largely be drawn from the local labor pool. The few operational staff who migrate to the area would find ample housing available for rent or purchase in the region. The new employees for the 11 commercial and industrial projects would also likely be drawn from within the region, or would find suitable housing from the region's ample inventory of vacant homes. The four residential projects in the City of Lemoore include approximately 1,460 new single-family and multi-family units. This substantial increase in housing would result in added demand for goods and services in the community which could stimulate new commercial development. However, such development would likely occur within the City of Lemoore on lands designated for commercial use in the City's general plan and zoning ordinance. Thus, while some growth inducement could occur under cumulative conditions, the resulting development would not represent unplanned growth. In any event, the development of VCIP solar and BESS projects would not induce additional growth and therefore would not contribute to any cumulative growth effect. Therefore, implementation of the VCIP energy resource and infrastructure plans would *not make a cumulatively considerable contribution* to any cumulative impact related to the inducement of unplanned growth in the area.

Displace Substantial Numbers of Existing People or Housing

None of the 68 cumulative project sites include housing that would be removed for development. As mentioned under Impact PH-2, one DFA in the northern Plan Area includes two single-family dwellings that would be removed for solar development. The units are owned by the District and rented out on a month-to-month basis. As noted, it is anticipated that the tenants would find replacement housing among the many units available in the general area. The removal of two rental units would not represent a substantial displacement of existing people or housing, on a cumulative basis or on a project basis. Therefore, the cumulative impact in terms of substantial displacement of existing people or housing would be *less than significant, and the project contribution would not be cumulatively considerable*.

² Table 4.0-2 includes a total of 72 cumulative projects; however, four of these projects comprise solar/BESS projects within the VCIP DFAs. Since the plan level impacts of the DFAs, including these projects, are addressed in the main impact analysis sections of this PEIR, they are not addressed again in the cumulative analyses.

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4.14.4. References – Population and Housing

CDOF 2024	California Department of Finance (CDOF), Demographic Research Unit. March 2024. <i>Report P-2A: Total Population Projections, California Counties, 2020-2060</i> . https://dof.ca.gov/forecasting/demographics/projections/
EDD 2025a	California Employment Development Department (EDD). May 2025. <i>Local Area Unemployment Statistics (LAUS)</i> . https://data.ca.gov/dataset/local-area-unemployment-statistics-laus
EDD 2025b	California Employment Development Department (EDD). April 2025. <i>Civilian Unemployment Rate for US and California</i> . https://data.ca.gov/dataset/civilian-unemployment-rate-for-us-and-california
Fresno COG 2022a	Fresno Council of Governments (Fresno COG). April 2022. <i>Program EIR for the Regional Transportation Plan and Sustainable Communities Strategy</i> . https://www.planfresno.com/planfresno/uploads/2024/11/2022-FCOG-RTP-SCS-Draft-PEIR_4-20-22_no-appendices.pdf
Fresno COG 2022b	Fresno County Council of Governments (FCOG). July 2022. <i>2022 Regional Transportation Plan and Sustainable Communities Strategy (2022 RTP/SCS)</i> . https://www.planfresno.com/sustainable-communities-strategies-fall-outreach/
Fresno COG 2023	Fresno County Council of Governments (FCOG). November 2023. <i>Fresno Multi-Jurisdictional 2023-2931 Housing Element – HCD Submittal Draft</i> . Available at: https://fresnomjhe.com/housing-elements/
Fresno County 2024b	Fresno County. 2024. <i>Fresno County General Plan Policy Document, Final Draft</i> . February 2024. https://www.fresnocountyca.gov/files/sharedassets/county/v/3/public-works-and-planning/development-services/planning-and-land-use/environmental-impact-reports/general-plan-review/fcgpr_general-plan_prd-county_01-12_24-clean.pdf
Kings County 2010a	Kings County. January 2010. <i>2035 Kings County General Plan</i> . https://www.countyofkingsca.gov/departments/community-development-agency/information/2035-general-plan
Kings County 2010b	Kings County. January 2010. <i>2035 Kings County General Plan, Land Use Element</i> . https://www.countyofkingsca.gov/home/showpublisheddocument/15995/636302054199570000
Madera County 1995	Madera County. <i>Madera County General Plan</i> . Adopted October 24, 1995. https://online.encodeplus.com/regs/maderacounty-ca-gp/doc-viewer.aspx?secid=45#secid-7

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Merced County 2013	Merced County. December 2013. <i>2030 Merced County General Plan</i> . https://www.co.merced.ca.us/2018/Adopted-General-Plan
U.S. Census 2020	U.S. Census Bureau. 2020. <i>2020 Census Demographic and Housing Characteristics File (DHC)</i> . https://www.census.gov/data/tables/2023/dec/2020-census-dhc.html#data

4.15. PUBLIC SERVICES

This section includes the following discussion and analysis related to public services: existing physical and regulatory setting; methodology and criteria for evaluating impacts; and results of the impact assessment, including identification of potentially significant impacts and corresponding mitigation measures to avoid or substantially lessen such impacts to the extent feasible, as appropriate.

PEIR Scoping Comments

During the PEIR scoping process, the District received two letters containing a comment related to public services. The comments submitted are summarized below (see PEIR Scoping Report in Appendix A of this document).

Leadership Counsel for Justice and Accountability

The comment letter requested that the PEIR analyze threats to human health or the environment associated with any hazardous materials and solid waste generated by the construction and operation of the project, including the movement and disposal of these materials both on and off-site. The comments also requested an analysis of the potential for fires associated with energy storage and transmission.

Fresno County Fire Protection District (FCFPD)

The comments from FCFPD are contained in a letter that refers extensively to Resolution 2025-02 adopted by the FCFPD Board of Directors, which is attached to the comment letter. The comment letter states: “As set forth in Resolution 2025-02, the FCFPD has determined that there is both a direct impact and cumulative impact on emergency response capabilities of the FCFPD to respond to fire, rescue, and medical services emergencies posed by the operation of: 1) solar photovoltaic (PV) generating facilities, and 2) stand-alone energy storage facilities (“PV projects”). The comment letter requests that the project proponent(s) be required to enter into a Fire Services Agreement with FCFPD consistent with Resolution 2025-02. According to FCFPD Resolution 2025-02, due to a state-mandated property tax exclusion for new solar facilities, the solar PV projects would not provide additional property tax revenues that would support FCFPD fire, rescue and medical emergency services to the solar PV projects. According to FCFPD, this property tax exclusion for new solar facilities creates a need for fire services agreements between solar developers and FCFPD.¹

[Note: Fire hazard and protection is addressed in Section 4.14.3. *Environmental Impact Analysis* under Impact PS-1, and in Section 4.18. *Wildfire*.]

¹ In response, it is noted that the referenced property tax exclusion is due to sunset at the end of 2026. Thus, it is highly likely that VCIP solar facilities will be fully subject to property tax. This increased tax revenue would be substantial for each solar/BESS project and may be sufficient to cover the cost of increased fire protection service that FCFPD anticipates. {AM0014.1}

4.15.1. Environmental Setting

Fire Protection and Emergency Services

Fire protection and emergency medical services in the VCIP Plan Area are provided by FCFPD and California Department of Forestry and Fire Protection (CAL FIRE). These fire agencies are described below.

FCFPD has an emergency response staff of 39 personnel who are stationed at 15 full-time fire stations organized under seven battalions throughout Fresno County. The southern portion of the Plan Area lies within Battalion 14, including Fire Station 93 in Huron and Station 94 near Harris Ranch. The northern portion of the Plan Area is Battalion 15, including Station 95 in Tranquillity and Station 96 in Mendota. FCFPD provides a full range of emergency response services, which include structural and wildland fire suppression, response to hazardous materials incidents, search and rescue, and basic life support medical services, among other services. FCFPD would provide fire and emergency medical response services to the VCIP facilities. For medical emergencies, the nearest engine company is dispatched in conjunction with the private ambulance provider. FCFPD responds to over 14,000 incidents annually, of which approximately 8,000 or 68 percent are medical in nature (FCFPD 2025).

CAL FIRE has primary responsibility for the State Responsibility Area (SRA) in the foothill areas west of I-5. The nearest CAL FIRE stations that would serve the Plan Area are in Coalinga and Santa Nella. FCFPD has a contract with CAL FIRE for cooperative fire protection services (CAL FIRE 2024a). For a full discussion of CAL FIRE's responsibilities with respect to wildfire, see Section 4.18. *Wildfire*.

The Central California Emergency Medical Services Agency (CEMSA) is responsible for medical emergencies and responses for Fresno, Madera, King, and Tulare counties. CCEMSA provides policies, protocols, and operation support for medical incidents in the counties and is responsible for emergency dispatch of ambulances (CEMSA 2025).

Law Enforcement Services

The Fresno County Sheriff's Office (FCSO) 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 commanded by a lieutenant who supervises field services from the area substation. The western area of Fresno County, including the entire Plan Area, is served by patrols dispatched from the Area 1 substation located in the City of San Joaquin (FCSO 2025).

The California Highway Patrol (CHP) handles traffic enforcement and vehicle accident investigations for the unincorporated areas of Fresno. The Plan Area is within the responsibility area of the CHP Coalinga office which is responsible for western Fresno and Kings counties (CHP 2025).

Schools

The VCIP Plan Area includes major portions of four school districts and small portions of four adjacent school districts, as described below.

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The Mendota Unified School District covers the northern third of the Plan Area. No District schools are located within the Plan Area and three schools are located within one mile of the Plan Area boundary, including: McCabe Elementary School, Mendota Junior High School, and Mendota High School.

The Golden Plains Unified School District (GPUSD) encompasses the central portion of the Plan Area. One GPUSD school – Cantua Creek Elementary School – is located within the plan Area on W. Clarkson Avenue in the community of Cantua Creek.

The Westside Elementary School District (WESD) is in the south-central portion of the Plan Area. WESD includes the Westside Elementary School located on W. Excelsior Avenue in the community of Westside.

The Coalinga/Huron Joint Unified School District (CHJUSD) covers the southern and southwestern portions of the Plan Area. CHJUSD includes three schools in the City of Huron including Huron Elementary, Huron Middle School, and Chestnut High School. These schools are located within one mile of the Plan Area but are not within the Plan Area. The CHJUSD operates five schools in the City of Coalinga, including three elementary schools, a middle school, and a high school. The Coalinga schools are located at least four miles west of the Plan Area boundary.

Four other school districts are partially located within the Plan Area but have no schools in or within one mile of the Plan Area. These districts include: Dos Palos Oro Loma Joint Unified School District to the northwest; Firebaugh-Las Deltas Joint Unified School District to the northeast; Burrel Union Elementary School District to the east; and Riverdale Joint Unified School District to the east (FCSS 2025).

Parks and Recreation

There are no city or county parks within the VCIP Plan Area, except for a portion of Rojas Pierce Park in Mendota which has not been annexed to the City and remains within the District's service area. The cities of Mendota and Huron also have public parks within one mile of the Plan Area.

There are two wildlife areas managed by the California Department of Fish and Wildlife within or adjacent to the Plan Area. The Pilibos Wildlife Area is located approximately 12 miles west of Mendota on a 128-acre site adjacent to the San Luis Canal. The wildlife area is managed specifically for scheduled dove hunts by permit (CDFW 2025a).

The Mendota Wildlife Area is an approximately 12,000-acre wildlife habitat management area located southeast of Mendota. Comprised largely of wetlands, the Wildlife Area provides habitat for numerous bird species and provides recreational opportunities in the form of bird watching and hunting of doves and ducks (CDFW 2025b). (See Section 4.4. *Biological Resources* for additional description of this and other wildlife areas in the region.)

In addition, BLM's Tumey Hills Recreation Area is located one mile west of the Plan Area off Panoche Road. Recreational activities at Tumey Hills include hiking, camping, wildlife viewing, and hunting.

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Other Public Facilities

The nearest public libraries are located outside the Plan Area in the cities of Mendota and San Joaquin, and the community of Tranquillity. The nearest community centers are located outside the Plan Area in Mendota and San Joaquin. The nearest major hospital (level-1 trauma center) is the Community Regional Medical Center in Fresno. Nearby medical clinics / urgent care centers are located in Mendota, Firebaugh, Coalinga and Avenal.

4.15.2. Regulatory Context

Federal

There are no federal laws, regulations, or policies pertaining to public services that are relevant to the VCIP.

State

California Fire Code

Similar to the International Fire Code (IFC), the California Fire Code (Fire Code) and the California Building Code (CBC) use a hazards classification system to determine the appropriate measures to incorporate to protect life and property. The Fire Code includes regulations regarding fire-resistance-rated construction, fire protection systems such as alarm and sprinkler systems, fire services features such as fire apparatus access roads, means of egress, fire safety during construction and demolition, and wildland-urban interface areas. Fire Code Section 4906 contains regulations for vegetation and fuel management to maintain clearances around structures. These requirements establish minimum standards to protect buildings located in Fire Hazard Severity Zones (FHSZs) within the SRA. Section 608 of the IFC has been adopted by the State of California and Fresno County to minimize risk of fire from stationary battery storage systems and to contain fire in the event of such an incident. Fresno County has adopted the Fire Code in its Ordinance Code as part of its building and construction regulations.

Fresno County

Fresno County General Plan

The Public Services and Facilities Element of the Fresno County General Plan (Fresno County 2024b) contains the following goals and policies related to public services that may be relevant to the VCIP:

Public Services and Facilities Element

G. Law Enforcement

- GOAL PF-G** To protect life and property by deterring crime and ensuring the prompt and efficient provision of law enforcement service and facility needs to meet the growing demand for police services associated with an increasing population.

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Policy PF-G.2 Law Enforcement Staffing Standards

The County shall strive to maintain a staffing ratio of two (2) sworn officers serving unincorporated residents per 1,000 residents served. (This count of officers includes all ranks of deputy sheriff personnel and excludes all support positions and all sworn officers serving county wide population interests such as bailiffs, and sworn officers serving contract cities and grant-specific populations).

Policy PF-G.4 Law Enforcement Service Standards

The County shall require development to pay its fair share of the costs for providing law enforcement facilities and equipment to maintain service standards.

Policy PF-G.6 Safe Design Features

The County shall promote the incorporation of safe design features (e.g., lighting, adequate view from streets into parks) into new development by providing the Sheriff Department the opportunity to review development proposals.

H. Fire Protection and Medical Services

GOAL PF-H To ensure the prompt and efficient provision of fire and emergency medical facility and service needs, to protect residents of and visitors to Fresno County from injury and loss of life, and to protect property from fire.

Policy PF-H.2 Adequate Fire Protection Facilities

Prior to the approval of a development project, the County shall determine the need for fire protection services. New development in unincorporated areas of the County shall not be approved until such time that fire protection facilities and services acceptable to the Public Works and Planning Director in consultation with the appropriate fire district are provided.

Policy PF-H.5 Minimize Fire Hazard Risk

The County shall require that new development be designed to maximize safety and minimize fire hazard risks to life and property.

Policy PF-H.8 Minimum Response Times

The County shall encourage local fire protection agencies in the county to maintain the following as minimum standards for average first alarm response times to emergency calls:

- a. 5 minutes in urban areas;
- b. 15 minutes in suburban areas; and
- c. 20 minutes in rural areas.

Policy PF-H.9**Fair-Share Costs**

The County shall require new development to develop or to pay its fair share of the costs to fund fire protection facilities that, at a minimum, maintain the service level standards in the preceding policies.

Policy PF-H.10**California Fire Code**

The County shall ensure that all proposed developments are reviewed for compliance with fire safety standards by responsible local fire agencies per the California Fire Code and other State and local ordinances.

Fresno County Fire Code

The County Ordinance Code, at Section 15.10.010, adopts and incorporates by reference the 2022 CBC as the Fresno County Fire Code (Fresno County 2024i).

For a full description of federal, state, and local statutes, regulations, codes, and standards related to fire safety and wildfire prevention, see Section 4.18. *Wildfire*.

4.15.3. Environmental Impact Analysis

METHODOLOGY

Evaluation of potential project impacts related to public services was based on the likelihood of VCIP implementation to increase demand or otherwise affect public services to the extent of resulting in the need for construction of new or altered public services facilities.

SIGNIFICANCE CRITERIA

Based on Appendix G of the state CEQA Guidelines, the project would be considered to result in a significant impact related to public services 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.
 - b) Police Protection.
 - c) Schools.
 - d) Parks.
 - e) Other public facilities.

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4.15.3.1. DIRECT AND INDIRECT EFFECTS

Impact PS-1. Fire Protection Services

Implementation of the VCIP Energy Resource and Infrastructure Plans would result in an incremental increase in demand for fire protection services, and this increase could be substantial and thus could result in degradation of service levels potentially leading to the necessity to construct new or expanded facilities. (*Less-than-Significant Impact with Mitigation*)

Fire Hazards During Construction

During construction, equipment and materials can pose potential fire hazards. Construction of the solar facilities, energy storage facilities, substations, and gen-tie and transmission lines would involve 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 refueling and operating vehicles and equipment off internal driveways where dry vegetation could be ignited. Welding activities also have the potential to result in the combustion of vegetation, as would smoking by construction workers.

As discussed in Chapter 2. *Project Description*, construction workers would receive training in fire safety and suppression to prevent fire and respond effectively in the unlikely event fire does break out.

Fire Hazards During Operation

During the operation of solar and energy storage facilities, equipment such as transformers, inverters, and substation equipment would involve the use of oils (e.g., dielectric or mineral oils and lubricants) and fuels, which would pose potential fire hazards. The battery storage facilities would also pose a potential fire hazard. Maintenance vehicles and panel washing trucks would travel among the solar arrays where low vegetation would be dry in summer and potentially combustible. Smoking by operational personnel would also pose a fire hazard.

The VCIP solar facilities would include several design and operational measures for fire prevention and suppression. Design measures 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 to minimize the potential for grass fires. VCIP projects would be constructed in accordance with applicable state and local standards, including the Fresno County Fire Code, which would require fireproofing and protection for all equipment. Solar panels would be manufactured from fire-resistant materials, and the associated electrical equipment would be enclosed with fire-resistant material. 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. 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.

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Portable carbon dioxide (CO₂) fire extinguishers would be mounted at the inverter/transformer pads throughout the Project. Maintenance crews would regularly inspect facilities for reliability and safety.

The VCIP energy storage facilities would consist of prefabricated electrical enclosures containing battery banks and associated switchboards, inverters and transformers. All battery containers would be installed on concrete foundations designed to provide secondary containment. The enclosures would have appropriate fire suppression systems built to code. Each energy storage unit would be designed in compliance with Section 608 of the IFC, which has been adopted by the State of California as California Fire Code section 1207, which is also adopted as the Fresno County Fire Code, to minimize risk of fire from stationary storage battery systems and contain fire in the event of such an incident. Under California law, the battery enclosures also must comply with Article 480 of the Electrical Code requiring appropriate insulation and venting for these types of systems, further decreasing associated risk of fire from the battery enclosures. The battery storage facilities would be equipped with fire suppression systems, smoke detectors, and emergency stops. For a detailed discussion of fire safety issues related to BESS, see Section 4.9. *Hazards and Hazardous Materials*, under Impact HAZ-2. As discussed in that section, the regulatory framework to ensure BESS safety and emergency response has advanced significantly in recent years. Thus, implementation of existing laws, codes, standards, and industry standard practices at the project level would avoid or reduce to a less-than-significant level the potential health, safety, and environmental hazards associated with BESS operation.

The VCIP solar and energy storage facilities would be required to comply with the regulations of the National Fire Protection Association and the American Insurance Association. Prior to building permit approval by Fresno County, the FCFPD's Fire Prevention/Fire Code Enforcement Bureau would review the construction plans for each VCIP project to ensure compliance with all code requirements and standards, including minimum requirements for emergency vehicle access and fire breaks. (For detailed discussion, see "Fire Emergency Response" below.)

Upon completion of each solar and energy storage facility, the exposed soils beneath and around the solar arrays would be revegetated to prevent erosion and dust generation, and also to protect on-site soils for future reclamation upon decommissioning. The exposed areas would be planted with an approved seed mix containing only "low water use" and low-growing plant species. The vegetative cover would be kept low through mechanical means (or sheep grazing) which would reduce fuel load buildup and reduce the potential hazard from grass fires. For each potential VCIP solar and BESS project, a Vegetation and Soil Management Plan (VSMP) would be required as specified in Mitigation Measure AG-1a. Protection of Long-Term Agricultural Land Capability. The preparation and implementation of the VSMP throughout the operational life of the solar/BESS facilities would ensure that onsite vegetation would be installed and maintained in a manner that would minimize fire hazard.

The VCIP gen-tie and transmission lines would present potential fire ignition sources. However, design and construction of transmission facilities would be subject to the National Electric Safety Code (NESC). As the transmission lines would be designed to withstand strong winds, tower or conductor failure would be highly unlikely and is not reasonably foreseeable. By requiring vertical and horizontal separation between towers and lines from existing vegetation and crops (e.g., orchard trees), the vegetation clearance requirements under NERC Standard FAC-003 and its California equivalents would prevent this existing vegetation from becoming a potential ignition source. In addition, transmission lines would be subject to utility Fire Prevention Plans and Wildfire Mitigation Plans prepared pursuant to state law. The relatively few potential VCIP projects in the SRA

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west of I-5 would be subject to enhanced restrictions during fire seasons, as well as review of project plans by CAL FIRE.

Fire Emergency Response

Given the comprehensive fire prevention requirements, standards, and practices applicable to the VCIP projects, as described above, the frequency of calls for emergency fire service is expected to be low. If and when needed, fire protection and emergency medical services to the VCIP Plan Area would be provided by the FCFPD, with response provided from the nearest FCFPD stations in Tranquillity, Harris Ranch, and Mendota. Assistance would be provided as requested from other fire departments in the region that participate in automatic aid or mutual aid agreements. The proximity of County fire services and effective road network of the Plan Area would facilitate accessibility of emergency vehicles and result in favorable response times. Based on driving distances between the fire stations and nearby areas of the VCIP Plan Area, it is expected that the response times from these fire stations for any emergency call from the Plan Area would remain consistent with the 20-minute response time goal in the County General Plan. The VCIP projects located in the SRA west of I-5 would receive fire emergency response by CAL FIRE from its nearby station in Coalinga, and the FCFPD, with assistance as needed from the other fire departments in the region. (For further discussion of fire hazard in the SRA, see Section 4.18. *Wildfire*.)

FCFPD Resolution 2025-02, attached to FCFPD's comment letter, states: "the entire west side of Fresno County lacks the resources to respond to fire, rescue, and medical services emergencies to the existing towns and energy facilities in an appropriate time. Lack of a central area station, crew, water tenders, and engines have been identified as needed by the [FCFPD]." In addition, Resolution 2025-02 states: "[fire] stations on the western side of the County are presently understaffed and under-equipped to handle emergency responses to the growing population of towns on the west side including Mendota, Tranquillity, San Joaquin, Coalinga, and others with current resources even with automatic mutual aid thus making it even more difficult to provide for these populations if personnel and equipment are responding to incidents at PV project sites." Resolution 2025-02 also states that FCFPD "has determined that there is both a direct impact and cumulative impact on emergency response capabilities of the [FCFPD] to respond to fire, rescue, and medical services emergencies posed by the operation of the solar PV projects." Finally, Resolution 2025-02 states that FCFPD "has determined that is necessary for solar PV projects to enter into an agreement with the [FCFPD] to provide payments to offset the direct and cumulative impact of solar PV projects on the [FCFPD]." To calculate the payments, "[T]he [FCFPD] staff has derived a methodology consisting of a formulas for PV project developer payments to ensure the funding of new facilities, apparatus and equipment, as well as enhancement of existing facilities." (FCFPD 2024 – contained in the PEIR Scoping Report in Appendix A of this document.)

FCFPD Resolution 2025-02 also asserts that due to state-mandated property tax exclusion for new solar facilities under Revenue and Taxation Code section 73, the solar PV projects would not provide additional property tax revenues that would support FCFPD fire, rescue and medical emergency services to the solar PV projects. (In response, it is noted that the referenced property tax exclusion is due to sunset at the end of 2026, so that it is highly likely that VCIP solar facilities will be fully subject to property tax. This increased tax revenue would be substantial for each solar/BESS project and may be sufficient to cover the cost of increased fire protection service that FCFPD anticipates.)

Based on the comment letter from FCFPD generally asserting that the VCIP projects could result in an incremental increase in demand for fire protection services and that this increase could be substantial and thus could result in degradation of service levels, this PEIR concludes at a programmatic level that implementation {AM0014.1}

of proposed VCIP projects could lead to the need construct new or expanded facilities. Therefore, it is concluded that implementation of the VCIP Energy Resource and Infrastructure Plans would result in a *potentially significant impact* related to an increase in fire protection services that could necessitate the alteration or construction of fire stations or other infrastructure to combat fire.

Mitigation Measure PS-1: Fire Protection Mitigation.

Prior to the issuance of building permits for each solar and BESS project to be constructed under the VCIP, the project proponent and the FCFPD shall enter into an agreement regarding funding of FCFPD services, if applicable, in the absence of increased property tax revenues generated by the project sufficient to cover the demonstrated cost of providing service to the project. The amount of funding to be provided by each project, if any, shall be supported by a financial analysis which establishes the requisite nexus and provides substantial evidence that the calculated funding amount bears a reasonable relationship (i.e., is roughly proportional) to the cost of FCFPD services to be provided to the project.

Significance After Mitigation: Less-than-significant impact.

Impact PS-2. Law Enforcement and Security

Implementation of the VCIP Energy Resource and Infrastructure Plans would result in an incremental increase in demand for law enforcement services; however, this increase is expected to be insubstantial and therefore would not degrade service levels or result in the need for new or altered law enforcement facilities. (No Impact)

Law enforcement services to the VCIP Plan Area are provided by the Fresno County Sheriff's Office and the CHP. During construction and decommissioning of the solar, energy storage, substations, and gen-tie and transmission lines, police services may be required due to possible theft of construction equipment and/or vandalism, although private security would be engaged to monitor the work sites during construction. Experience on previous solar construction projects in the District indicates that the presence of on-site security staff virtually eliminates the incidence of theft and vandalism at the sites (Biller 2025).

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. Construction of gen-tie and transmission lines may require temporary partial closure of roadways, especially where transmission lines are strung over public roadways. Any temporary traffic disruptions would involve coordination with the Sheriff's Office and/or CHP. The temporary traffic hazards associated with VCIP project construction and decommissioning are discussed in Section 4.15. *Transportation*, under Impact TR-4. Any potential traffic hazard impacts would be avoided or substantially reduced through implementation of the traffic control measures set forth in Mitigation Measure TR-1. The required traffic management measures would minimize use of the Fresno County Sheriff's Office and CHP resources.

Once each potential VCIP project is completed and operational, calls for service from the solar and energy storage facilities would be expected to be infrequent, primarily due to the comprehensive security measures

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included in the design and operation of the solar and energy storage projects, 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 each solar facility. These project security features would be intended to act as a deterrent to crimes such as theft and vandalism and would be operationally integrated with the services of a private security company. Video feeds from the surveillance equipment would be transmitted in real time to the off-site security contractor for monitoring. If the surveillance system detects a breach, a security representative would be dispatched to the site. Experience with existing solar facilities in the District indicates that the presence of on-site security staff during all off hours (evenings and weekends) virtually eliminates the incidence of theft and vandalism at the facilities (Biller 2025).

Overall demand for law enforcement services would be very low during construction, operation, and decommissioning of VCIP facilities. Since implementation of the VCIP Energy Resource and Infrastructure Plans would not result in a substantial increase in demand for law enforcement services, there would be *no impact* in terms of necessitating new or physically altered Sheriff's Office or CHP facilities to maintain adequate service levels.

Mitigation Measures: No mitigation is required.

Impact PS-3. Schools, Parks, and Other Public Facilities

Implementation of the VCIP Energy Resource and Infrastructure Plans would result in no demand for schools, parks, or other public facilities, and therefore would not degrade service levels or result in the need for new or altered schools, parks, or other public facilities. (No Impact)

Schools

The VCIP energy resource and infrastructure projects would not include or require housing components. The construction and decommissioning phases of each project would be temporary and most workers would reside within commuting distance, while the few who would come from outside the area would find temporary accommodation nearby during the work week. It is not expected that any construction workers would relocate to the area with their families, and thus the VCIP projects would not result in an increased school-aged population who would create a need for new or expanded school facilities. During operations, typical solar and energy storage projects would employ about ten permanent operational staff, plus a daily average of ten additional workers who would visit the facilities periodically for maintenance and repair. These permanent staff are expected to be drawn from existing communities in the region. The collection substations, gen-tie lines and connector transmission lines would require no permanent staff for operations. In summary, the construction, operation, and decommissioning of the VCIP facilities would not result in increased housing or population in the region, and thus 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.

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Parks

Demand for parks and recreation is mainly generated by residential development. Construction of VCIP facilities would involve no permanent staff, and the few permanent staff involved in facility operations would be unlikely to seek out recreational activities in the area before, during, or after working hours. Moreover, permanent staff would be drawn from the surrounding communities and would not be new residents to those communities. As such, VCIP implementation 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 VCIP projects would generate no demand for social services, courts, libraries, or other public services. On rare occasions, the use of medical facilities may be needed in the event of work injuries, but such incidents would be readily accommodated at existing facilities. As such, VCIP implementation would have *no impact* in terms of necessitating new or expanded facilities to maintain adequate service levels for these other public services.

Mitigation Measures: No mitigation is required.

4.15.3.2. TRANSMISSION CORRIDORS OUTSIDE THE VCIP

The transmission corridors for delivery of solar generation from VCIP projects to urban electricity markets in northern and southern California have been identified at a conceptual level in this PEIR to allow a very general discussion of environmental impacts associated with transmission line development in these corridors for informational purposes. These transmission delivery corridors extend far beyond the District's boundaries and are not part of the proposed VCIP. Planning and approval of these outside transmission lines are under the jurisdiction of the state and federal energy regulatory agencies (e.g., CPUC, WAPA), public utilities (e.g., PG&E, SCE), and cities and counties traversed by the transmission corridors. The following discussion provides an overview of potential impacts of the outside transmission lines with respect to public services and is included for information purposes only.

Fire Protection and Emergency Services

During construction of the outside transmission lines, equipment and materials can pose potential fire hazards. Construction would involve 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 refueling and operating vehicles and equipment in areas where dry vegetation could be ignited. Welding activities also have the potential to result in the combustion of vegetation, as would smoking by construction workers. Transmission line construction workers would receive training in fire safety and suppression to prevent fire and respond effectively in the unlikely event fire does break out.

Transmission line operation would present potential fire ignition sources particularly in the remote mountain areas. However, design and construction of transmission facilities would be subject to the NESC. As the transmission lines would be designed to withstand strong winds, tower or conductor failure would be highly

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unlikely and is not reasonably foreseeable. By requiring vertical and horizontal separation between towers and lines from existing vegetation and crops (e.g., orchard trees), the vegetation clearance requirements under NERC Standard FAC-003 and its California equivalents would prevent this existing vegetation from becoming potential ignition sources. In addition, transmission lines would be subject to utility Fire Prevention Plans and Wildfire Mitigation Plans prepared pursuant to state law. Compliance with all applicable codes, standards, and required fire safety measures during construction and operation of the outside transmission lines, as required, would provide a high degree of protection from wildfire risk.

Fire hazard mapping by CAL FIRE shows that approximately half of the outside transmission corridors are in the SRA, with the remainder in the Local Responsibility Areas (LRAs) of the affected counties. Within the valley floor areas that comprise the LRAs, fire hazard mapping by CAL FIRE shows the lands traversed by the outside transmission lines as “unzoned,” indicating low fire hazard. Fires initiated in or near the transmission corridors in the valley areas are expected to be infrequent and county fire departments with primary responsibility for the LRAs would readily respond to any such incidents with no discernible effect on overall service levels.

Approximately half of the outside transmission corridors pass through rugged terrain within the SRA where CAL Fire has primary responsibility for responding to fire emergencies. Fire prevention measures in these remote areas include vegetation management to maintain minimum clearance requirements, and by enhanced restrictions placed on activities during fire seasons, especially during Red Flag Warnings of Fire Weather Watch advisories by the National Weather Service. All equipment and machinery would be equipped with spark arresters.

The risk of fire ignitions associated with the outside transmission corridors would be substantially reduced by the fire safety measures required to be incorporated into the design, construction, and maintenance of the outside transmission lines. Thus, the additional burden on firefighting agencies due to potential fires initiated by the outside transmission lines would not be substantial and would not necessitate new or altered facilities to maintain service levels or performance objectives.

Law Enforcement and Security

Construction of the outside transmission lines may require police assistance with temporary road closures when transmission lines are being strung over public roads. However, the overall demand for law enforcement services would be low and would not result in the need for new or altered police facilities.

Schools

Construction of the outside transmission lines would involve relatively small crews that would be constantly moving as transmission line installation progresses over hundreds of miles. Some crew members would be drawn from surrounding communities, and some would come from outside the area and seek temporary accommodation during the work week. Given the transient nature of the work, the construction of the outside transmission lines would not involve permanent relocation of families who would bring new school-aged children to the project area. During operations, the transmission lines would be unstaffed except for occasional visits by workers conducting inspections or maintenance. As such, the outside transmission lines would not result in the need for new or expanded schools.

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Parks

Demand for parks and recreation is mainly generated by residential development. The outside transmission lines would involve small mobile crews during construction, and no staff during operation. As such, the outside transmission lines would not increase demand for parks and recreational facilities and would not result in the need for new or expanded parks or recreation facilities.

Other Public Facilities

The outside transmission lines would generate no demand for social services, courts, libraries, or other public services, and may on rare occasions require the use of medical facilities in the event of work injuries. As such, the outside transmission lines would not result in the need for new or expanded facilities to maintain adequate service levels for these other public services.

4.15.3.3. CUMULATIVE IMPACTS

Fire Protection and Emergency Services

As shown in the cumulative projects list in Table 4.0-2, most of the pending, approved, and completed projects consist of large-scale solar, energy storage or other clean energy and electrical facilities, along with their associated substations and gen-tie lines. As discussed for the VCIP projects under Impact PS-1, the potential for fire at these facilities is substantially reduced by the numerous laws, regulations, codes, standards, and protocols that would be incorporated into the design, construction, and operation of these facilities for the purposes of fire prevention, protection, and suppression. However, largely due to Revenue and Taxation Code section 73, which exempts solar/BESS facilities and prevents a rise in property taxes that would support FCFPD's services, FCFPD commented that it anticipates a direct impact and a cumulative impact on emergency response capabilities of the FCFPD due to the demands on fire service resulting from solar and BESS development in Fresno County (FCFPD 2024). As noted above, however, this property tax exclusion will expire at the end of 2026, before the proposed VCIP and several cumulative solar and BESS projects would likely be implemented. The other cumulative projects in the unincorporated area include three small commercial centers and four agricultural processing facilities, all of which would be constructed in accordance with the Fresno County Fire Code. The potential for fire incidents at these cumulative projects is low, and any emergency calls would be readily handled by the four nearby FCFPD stations distributed throughout western Fresno County, in addition to the CAL FIRE station in Coalinga.

The remaining cumulative projects in Table 4.0-2 consist of six urban development projects for residential, commercial, and industrial uses in the City of Lemoore. These projects would be constructed in accordance with the Lemoore Fire Code and served by the Lemoore Fire Department, and would not place additional demand on FCFPD, except in rare instances of requests for mutual aid (Lemoore 2020, 2021, 2022a, 2022b, 2023a, 2023b).

As discussed in Section 4.18.3.2, the risk of fire ignitions associated with the outside transmission corridors is substantially reduced to a less-than-significant level by the fire safety measures required to be incorporated into the design, construction, and maintenance of the outside transmission lines. Thus, the additional burden on firefighting agencies due to potential fires initiated by the outside transmission lines would be relatively low {AM0014.1}

and not cumulatively considerable. Cumulative development in the vicinity of the outside transmission lines would largely consist of very low density rural residential development as allowed in rural areas under the applicable counties' general plans. Cumulative development on the valley floor segments of the transmission corridor would be subject to low fire risk and would have a low demand for fire protection services. Cumulative development in the rugged mountain terrain traversed by half of the transmission corridors would be located in the SRA where the mapped fire hazard ranges from moderate to high in most areas, and is very high in the San Gabriel Mountains to the northwest of the Vincent Substation. The rural development in these fire risk areas would be subject to strict vegetation management standards under California Fire Code Section 4906, which requires minimum setback distances of vegetation to combustible structures, the use of fire-resistant vegetation, and restrictions on planting of trees and shrubs. In addition, seven CAL FIRE stations are located in the vicinity of the SRA traversed by the outside transmission corridors, as well as ten counties with their own fire departments. Given that the fire risk along the outside transmission corridors would be spread among various fire protection agencies, the cumulative additional demand on any one agency would not be substantial and would not necessitate new or altered facilities to maintain service levels or performance objectives; as such it would not be cumulatively considerable.

Cumulative demand for fire protection service upon the FCFPD, CAL FIRE, or any of the other affected county fire departments may be sufficient to create the need for new or physically altered facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives. Therefore, the potential cumulative impacts *would be significant*, and the contribution from implementation of the VCIP Energy Resource and Infrastructure Plans *would be cumulatively considerable*. However, the cumulative contribution from VCIP implementation would be mitigated by implementation of MM PS-1 [Fire Protection Mitigation], and it is anticipated that other cumulative projects in Fresno County would be subject to similar mitigation measures.

Law Enforcement and Security Services

As discussed above, most of the cumulative projects consist of large-scale solar, energy storage or other clean energy and electrical facilities, along with their associated substations and gen-tie lines. As discussed for the VCIP projects under Impact PS-2, these projects use comprehensive security features including perimeter fencing, video surveillance, and security patrols. During construction, police assistance is occasionally needed with road closures and traffic control. Therefore, the potential demand for law enforcement service from these facilities is low, on an individual project and cumulative basis. As such, these projects would not result in substantial degradation of service levels for the Fresno County Sheriff's Office or CHP. The other cumulative projects in the unincorporated area include four agricultural processing facilities, all of which would have low demand for law enforcement services. Cumulative projects also include three small commercial centers, two of which would be on I-5 and the third at the junction of SR-198 and SR-269. These commercial centers could be subject to calls for shoplifting, vandalism, and other criminal incidents. However, these centers would be relatively small, and the overall cumulative demand for law enforcement services would be low. Thus, demand from these commercial projects would not combine with the low demand from the energy and agriculture related projects to result in a substantial degradation in service levels or performance objectives of the Fresno County Sheriff's Office or CHP.

The remaining cumulative projects in Table 4.0-2 consist of six urban development projects for residential, commercial, and industrial uses in the City of Lemoore. The demand for law enforcement service by these projects would be met by the Lemoore Police Department and would not place additional demand on the Fresno County Sheriff's Office or CHP (Lemoore 2020, 2021, 2022a, 2022b, 2023a, 2023b).

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As discussed in Section 4.18.3.2, construction of the outside transmission lines would require occasional assistance from law enforcement for temporary road closures when transmission lines are strung over public roads, or with other temporary needs for traffic control. Operation of the transmission lines would require no law enforcement services. The rural residential development that would be allowed in the general vicinity of the outside transmission lines would also place a low demand on police services, which would be spread over ten counties traversed by the transmission corridors.

Cumulative demand for law enforcement services upon the Fresno County Sheriff's Office, CHP, or any of the other affected county sheriff's departments would not be substantial and would not create the need for new or physically altered facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives. Therefore, the cumulative impact *would be less than significant*, and the contribution from implementation of the VCIP Energy Resource and Infrastructure Plans *would not be considerable*.

Schools

Most of the cumulative projects consist of large-scale solar and energy storage facilities, associated substations, gen-tie and transmission lines, agricultural processing facilities, and commercial and industrial development. None of these projects would include new housing or population that would include school-aged children. In the City of Lemoore, there are four approved residential projects with a total of over 1,461 housing units, which would generate a total of 866 new students (Lemoore 2020, 2022a, 2022b, 2023). To cover the costs of providing additional school facilities to serve these students, each project will be required to pay impact fees as required under the Education Code and Government Code. Payment of fees authorized by statute is deemed "full and complete" mitigation for school impacts (Government Code, section 65996).

The construction of the outside transmission lines would temporarily involve relatively small work crews, and transmission line operation would involve periodic visits by inspection and maintenance personnel. The rural residential development that would be allowed in the general vicinity of the outside transmission lines would also generate few school-aged children, which would be spread over ten counties traversed by the transmission corridors. Since the outside transmission lines would not include new housing, they would have no impact on schools, and the contribution from the outside transmission lines to any cumulative impact to schools would not be considerable.

In summary, the cumulative impact to schools would be *less than significant*, and the contribution from implementation of the VCIP Energy Resource and Infrastructure Plans to any cumulative impact *would not be considerable*.

Parks

Most of the cumulative projects are non-residential and would have no impact on parks. In the City of Lemoore, there are four approved residential projects that would increase the City's population by approximately 4,529 persons. Based on the City's ordinance requirement of 5 acres of parkland per thousand residents, approximately 23 acres of new parkland would be required for these projects, or payment of fees in lieu of new parkland dedication (Lemoore 2020, 2022a, 2022b, 2023). Since all four of these projects will be required to comply with the City's parkland mitigation requirement, impacts to parks would be less than significant, both on an individual project and cumulative basis.

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As discussed above, the outside transmission lines would not include new housing, and therefore would have no impact related to demand for additional parks.

The cumulative impacts to parks would be *less than significant*, and the contribution from implementation of the VCIP Energy Resource and Infrastructure Plans to any cumulative impact *would not be considerable*.

Other Public Services

The types of other public services commonly affected by development projects include social services, courts, hospitals, and libraries. Cumulative projects consist mainly of clean energy facilities and other non-residential uses. These facilities would result in no permanent increases in population or employment, and therefore, would not result in increased demand for these other public services.

Construction of the residential projects approved in the City of Lemoore would generate demand for other public services. However, the small increase in demand from these projects would not require construction of additional facilities (Lemoore 2020, 2022a, 2022b, 2023). As such, the cumulative projects would not collectively result in the need for new or expanded public facilities which would result in adverse physical environmental impacts. Therefore, there would be *no cumulative impact* associated with these other public services, and the contribution from implementation of the VCIP Energy Resource and Infrastructure Plans to any cumulative impact *would not be considerable*.

4.15.4. References – Public Services

Biller 2025	Biller, Christopher, Senior Construction Manager, Westlands Solar Park. <i>Personal Communication</i> , March 5, 2025.
CAL FIRE 2024a	California Department of Forestry and Fire Protection (CAL FIRE). May 2024. 2024 Fresno-Kings Unit Strategic Fire Plan. https://34c031f8-c9fd-4018-8c5a-4159cdff6b0d-cdn-endpoint.azureedge.net/-/media/osfm-website/what-we-do/community-wildfire-preparedness-and-mitigation/fire-plan/2024/2024-fresno-kings-unit-fire-plan.pdf?rev=4e898d27ef284c5586bb578619b8147e&hash=FB03660E4381199F248B0DAA3CF0057A
CCEMSA 2025	Central California Emergency Medical Services Agency (CCEMSA). As of April 24, 2025. <i>Emergency Medical Services Administrative Policies and Procedures</i> . https://www.fresnocountyca.gov/Departments/Public-Health/Emergency-Services/Emergency-Medical-Services-EMS/CCEMSA-Policies-and-Procedures
CDFW 2025a	California Department of Fish and Wildlife (CDFW). <i>Mendota Wildlife Area</i> . As of April 24, 2025. https://wildlife.ca.gov/Lands/Places-to-Visit/Mendota-WA
CDFW 2025b	California Department of Fish and Wildlife (CDFW). <i>Dove Hunts</i> . As of April 24, 2025. https://wildlife.ca.gov/Hunting/Upland-Game-Birds/Hunts/Dove
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CHP 2025	California Highway Patrol (CHP). <i>CHP Area Offices – Coalinga</i> . As of April 24, 2025. https://www.chp.ca.gov/find-an-office/central-division/offices/(495)-coalinga
FCFPD 2024	Fresno County Fire Protection District (FCFPD). April 10, 2024. <i>Comment Letter on VCIP</i> . Contained in PEIR Scoping Report in Appendix A of this PEIR.
FCFPD 2025	Fresno County Fire Protection District (FCFPD). <i>Operations</i> . As of April 24, 2025 https://www.fresnocountyfire.org/district-operations
FCSO 2025	Fresno County Sheriff's Office (FCSO). <i>Patrol Areas</i> . As of April 24, 2025. https://www.fresnosheriff.org/units/enforcement/patrol-areas.html
FCSS 2025	Fresno County Superintendent of Schools (FCSS). <i>Districts and Schools</i> . As of April 24, 2025. https://www.fcoe.org/districts
Fresno County 2024b	Fresno County. February 2024. <i>Fresno County General Plan Policy Document, Final Draft</i> . https://www.fresnocountyca.gov/files/sharedassets/county/v/3/public-works-and-planning/development-services/planning-and-land-use/environmental-impact-reports/general-plan-review/fcgrp_general-plan_prd-county_01-12_24-clean.pdf
Fresno County 2024i	County of Fresno. <i>Fresno County Ordinance Code</i> . As amended through December 10, 2024. https://library.municode.com/ca/fresno_county/codes/code_of_ordinances
Lemoore 2020	City of Lemoore. April 2020. <i>Lennar Homes Tentative Tract Map 848 – IS/MND</i> . https://lemoore.com/wp-content/uploads/2023/08/Lennar-Tract-848-Draft-IS-MND-final.pdf
Lemoore 2021	City of Lemoore. March 2021. <i>Helena Fertilizer Plant Project – IS/MND</i> . https://lemoore.com/wp-content/uploads/2021/03/Helena-Chemical-Plant-Expansion-Project-IS-MND-March-2021.pdf
Lemoore 2022a	City of Lemoore. January 2022. <i>Lacey Ranch Area Master Plan Project – Draft EIR</i> . https://lemoore.com/wp-content/uploads/2022/01/Lacey-Ranch-DEIR-1-24-22.pdf
Lemoore 2022b	City of Lemoore. February 2022. <i>Tract 935 - IS/MND</i> . https://lemoore.com/wp-content/uploads/2022/02/Tract-935-IS-MND-with-appendices.pdf
Lemoore 2023a	City of Lemoore. April 2023. <i>Maverick Gas Station and Industrial Park Project – IS/MND</i> . https://lemoore.com/wp-content/uploads/2023/04/Maverik-and-Industrial-Park-Project-Initial-Study-MND.pdf
Lemoore 2023b	City of Lemoore. August 2023. <i>WCP Developers, LLC – 280-Lot Residential Subdivision (Lemoore, CA) – IS/MND</i> . https://files.ceganet.opr.ca.gov/290102-1/attachment/pfbUnZdmZvVAxrxtBbsUp6N2dq7nRMfZ1vUL-8SL5isUADw7IT8Yq4IKDZsoZy-F_i6tGtpjDmAu-8eh0

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4.16. TRANSPORTATION

This section includes the following discussion and analysis related to transportation: environmental and regulatory setting; criteria and methodology for evaluating impacts; and the results of the impact assessment, including identification of potentially significant impacts and corresponding mitigation measures to avoid or substantially lessen such impacts to the extent feasible. The following discussion is based on the Traffic Study prepared for the PEIR by Peters Engineering Group in July 2025 (Traffic Study), which is incorporated into this PEIR by reference, as provided under CEQA Guidelines section 15150. The Traffic Study is contained in Appendix E of this PEIR, and its findings are summarized below.

PEIR Scoping Comments

During the PEIR scoping process, the District received one letter containing comments related to transportation. The comment submitted is quoted below (see PEIR Scoping Report in Appendix A of this document).

Leadership Counsel for Justice and Accountability

“This implementation of the VCIP will likely have significant and unavoidable traffic impacts due construction of large-scale solar farms. Therefore, the EIR must analyze and provide estimated vehicle miles traveled (VMT) generated by a project of this size and scale and include all feasible mitigation measures which reduce VMTs. Some of those mitigation measures must include, but not be limited to: public transportation stops at and near the VCIP projects, connective trails and bike lanes throughout the VCIP project, electric car and bike charging stations, local hiring provisions for the commercial development, a walk/ride to school program for the additional schools that will be added to the Project site, and a community rideshare program. The EIR should also include safety features for pedestrians and bicyclists. These measures would include, but not be limited to: HAWK Systems, adequate sidewalks, protected bike lanes, adequate pedestrian safety signage, and school crossing guards.”

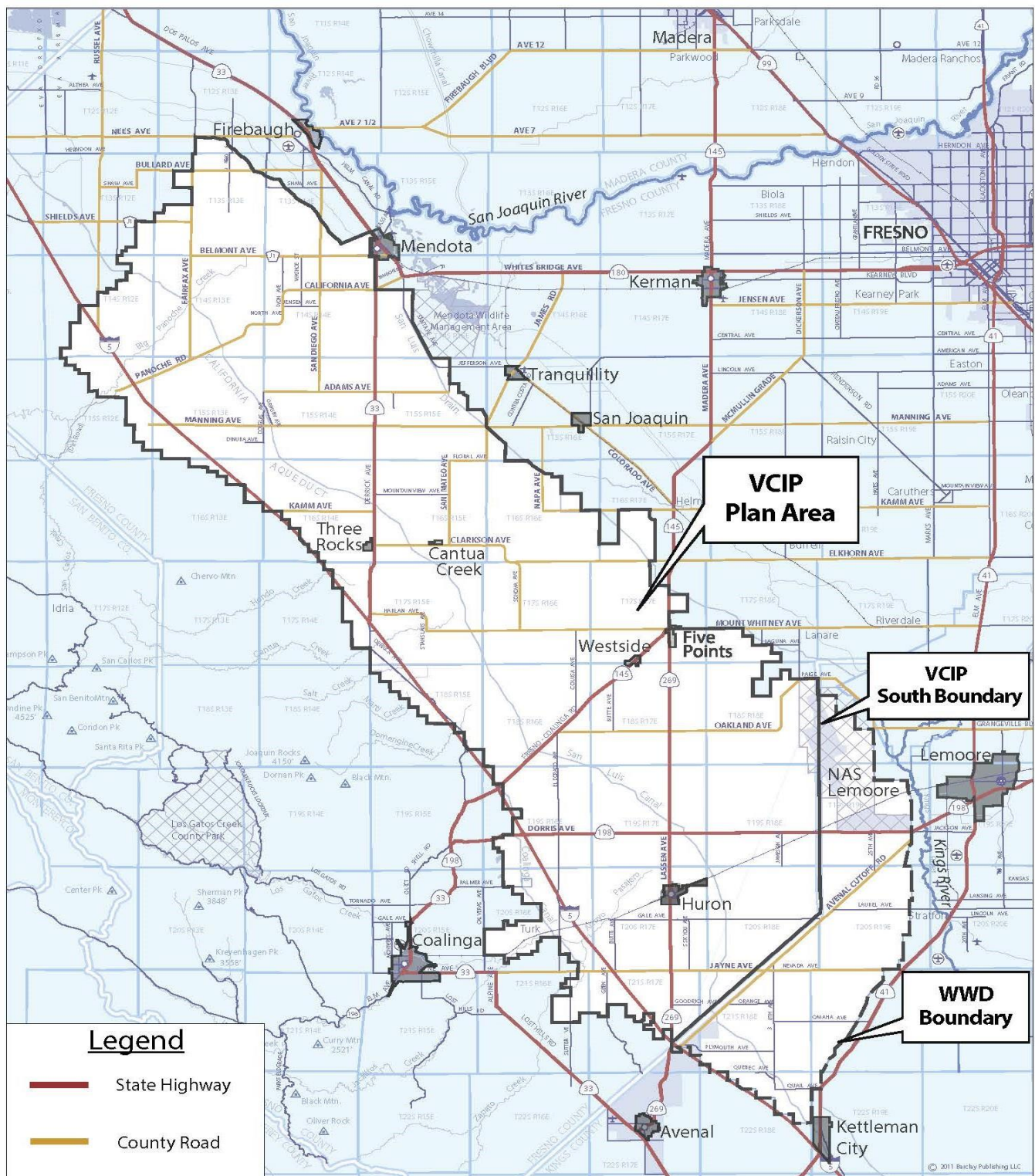
[Note: Potential impacts associated with VMT are addressed below in Section 4.16.3. *Environmental Impact Analysis* under Impacts TR-1 through TR-4.]

4.15.1. Environmental Setting

The VCIP Plan Area is located entirely within the unincorporated area of western Fresno County (County). The Plan Area is generally bounded on the west by the foothills of the Coastal Ranges, on the north by West Nees Avenue, on the east by Fresno Slough, and the south by the Fresno/Kings County boundary. The roadway network providing access to the Plan Area is described below. To establish existing traffic conditions, Peters Engineering Group conducted twenty-four-hour traffic counts and twenty-four-hour turning-movement counts in July and September 2024 on the area roadways and intersections that potential traffic generated by the VCIP would likely use. The traffic counts provided the basis for determining existing traffic conditions (i.e., existing daily traffic flow volumes or levels of service (LOS)) on state highways and county roads providing access to and within the Plan Area (see Appendix E, p. 6).

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4. Environmental Impact Analysis
4.16. Transportation



Roads and Highways
Figure 4.15-1

State Highways

State highways provide primary transportation access throughout the Plan Area and to regional population centers and beyond. These highways include Interstate 5 (I-5), State Route (SR)-33, SR-145, SR-180, SR-198, and SR-269 (see Figure 4.16-1).

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 4.16.3. *Environmental Impact Analysis* for definitions of Levels of Service.) All state highways in the rural areas of the Plan Area and vicinity currently operate at acceptable levels of service (i.e., LOS B or C). Some urban segments of state highways along the travel routes to the Plan Area operate at unacceptable LOS D, as discussed below.

County and Local Roads

The Plan Area includes several Fresno County roads including W. Nees, N. Russell, W. Fairfax, W. Shields, Belmont, N. Panoche, W. California, W. Manning, W. Kamm, W. Mount Whitney, and W. Oakland Avenues, among others (see Figure 4.16-1). The potential VCIP projects would also be served by Madera County roads including Avenues 7, 7½, and 12, and Firebaugh Boulevard. Almost all county roads in the Plan Area and vicinity operate at acceptable LOS C or better under existing conditions. The exceptions are the segment of W. California Avenue east of N. San Diego Avenue, and the segment of Belmont Avenue east of N. San Diego Avenue, both of which operate at unacceptable LOS D during the PM peak period that typically occurs between the hours of 4:00 and 6:00 PM.

Traffic generated by the potential VCIP projects would also use local roads in the cities of Firebaugh (12th and 13th Streets, and N Street [SR-33]), Mendota (Oller Street [SR-180]), and Kerman (Whitesbridge Road [SR-180] and Madera Avenue [SR-145]). Most of these urban road segments operate at acceptable LOS C or better under existing conditions, except the segment of 12th Street west of SR-33 in Firebaugh which operates at unacceptable LOS D during the AM and PM peak periods. Regarding potentially affected road intersections, the urban intersections that would be affected by VCIP traffic were all found to be operating at acceptable LOS C or better during the AM and PM peak periods.

Public Transit

The Fresno County Rural Transit Agency (FCRTA) is the primary provider of public transit services in the rural areas of Fresno County. Service is provided through several transit subsystems that operate throughout the rural areas of the County. The Plan Area is served by five transit systems which provide service to all unincorporated communities in the Plan Area as well as nearby cities and the Fresno metropolitan area, connecting residents to employment and service centers in the region (Fresno County 2024b). In 2023, FCRTA completed a comprehensive systemwide analysis with a view to increasing transit access in the region. The results are contained in FCRTA’s “Short Range Transit Plan for the Rural Fresno County Area 2024-2028. The pertinent recommendations of the study included the following: 1) Expand Transit Service Area Boundaries to transport rural residents in close proximity to existing communities served; 2) Introduce additional marketing in this service area; 3) Use of microgrid (solar) and EV technology for transit routes. The study also focused on unresolved needs and issues such as facilitating greater acceptance of home-to-work commuter transportation services through subsidized carpooling, commuter vanpooling, and farm labor vanpooling. The study noted that commercial vanpooling providers have provided more than 450 vehicles in the south San Joaquin Valley, including Fresno County (FCRTA 2023).

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Non-Motorized Transportation

Currently, there are no designated bicycle routes or recreational trails within the Plan Area. The Fresno County Bicycle and Regional Trails Master Plan includes one planned Class II Bikeway within the Plan Area. The planned Class II Bikeway extends west from Mendota along Belmont Avenue to Fairfax Avenue, where it turns north and extends to Shields Avenue, where it turns west and continues to (I-5). There are no existing or planned pedestrian facilities or recreational trails within the Plan Area (Fresno County 2024b).

Airports

There are four general aviation airports in the Plan Area and vicinity. These include the Robert William Johnston Municipal Airport in Mendota, the New Coalinga Municipal Airport, Harris Ranch Airport, and the Firebaugh Airport. The military airfield at Naval Air Station (NAS) Lemoore is located adjacent to the southeastern boundary of the Plan Area in Kings County. There are also six private airstrips distributed throughout the Plan Area, and another five airstrips within five miles of the Plan Area. These are described in more detail in Section 4.9. *Hazards & Hazardous Materials*.

4.15.2. Regulatory Context

State

California Vehicle Code

Various sections of the California Vehicle Code (CVC) and regulations promulgated by the California Department of Transportation (Caltrans) would apply to the potential VCIP energy and infrastructure projects. CVC section 35550 imposes weight guidelines and restrictions upon vehicles traveling on state freeways and highways. Pursuant to CVC section 35780 and California Code of Regulations title 21 section 1411.2, haulers of oversized or excessive loads over state highways must obtain a “Single-Trip Transportation Permit” from Caltrans following the procedures outlined in its Transportation Permits Manual prior to delivery of any oversized load (Caltrans 2025b). 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 requirements governing the transportation of hazardous materials on state highways (see Section 4.9. *Hazards and Hazardous Materials* for additional discussion).

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.

Senate Bill 743

California Senate Bill (SB) 743, which went into effect in January 2014, states that “[n]ew methodologies under the California Environmental Quality Act are needed for evaluating transportation impacts that are better able to promote the state’s goals of reducing greenhouse gas emissions and traffic-related air pollution, promoting the development of a multimodal transportation system, and providing clean, efficient access to destinations.” Under {00080666.1}

SB 743, the focus of transportation analysis shifts from driver delay, which is typically measured by traffic LOS, to a new measurement – vehicle miles traveled (VMT). This change in metrics is intended to further the state’s long-term greenhouse gas reduction goals by reducing fuel consumption in the transportation sector, specifically through reductions in per capita VMT associated with new land use projects, and thereby promoting compact, mixed-use development patterns (Senate Bill No. 743).

To implement SB 743, the Natural Resources Agency adopted revisions to the CEQA Guidelines which became effective on December 28, 2018. The revised CEQA Guidelines eliminated the application of LOS-related metrics for determining the significance of transportation impacts associated with development projects, land use plans, and transportation infrastructure projects. Under the CEQA Guidelines, VMT-related metric(s) are required to evaluate the significance of transportation-related impacts under CEQA. (The specific requirements of the CEQA Guidelines revisions under SB 743 are discussed under Impact TR-2 below.) SB 743 does not preclude the use of LOS-related metrics as set forth in local general plan policies, zoning codes, conditions of approval, or any other planning requirements that require evaluation of LOS, but these metrics may no longer constitute the basis for determining the significance of transportation impacts under CEQA.

Under SB 743, local land use agencies were required to establish VMT significance thresholds to be applied in CEQA analyses of proposed land use projects by July 1, 2020. Fresno County adopted a VMT threshold as part of its General Plan update, adopted in February 2024. General Plan Policy TR-A.25, which is recited in full below, establishes a VMT threshold of significance for new development projects of 87 percent of the countywide average VMT. Any individual project resulting in VMT that exceeds 87 percent of the countywide average must implement project-specific mitigation measures. Regarding projects in rural areas, the Technical Advisory provides: “In rural areas of non-MPO counties (i.e., areas not near established or incorporated cities or towns), fewer options may be available for reducing VMT, and significance thresholds may be best determined on a case-by-case basis.” Further guidance on conducting VMT evaluations is provided in the Fresno COG’s “Fresno County SB 743 Implementation Regional Guidelines,” described below.

Fresno County

Fresno County General Plan

The Fresno County General Plan (Fresno County 2024b) contains the following goals and policies related to transportation facilities which are relevant to the VCIP.

Transportation and Circulation Element

A. Streets and Highways

Goal TR-A To plan and provide a unified, multi-modal, coordinated, and cost-efficient countywide street and highway system that ensures the safe, orderly, and efficient movement of people and goods, including travel by walking, bicycle, or transit.

Policy TR-A.2 Vehicle Miles Traveled (VMT) Standards and CEQA Evaluation

The County shall require evaluation of County General Plan land use designation changes, zone changes, and discretionary development for their individual (i.e., project-specific) and cumulative transportation impacts based on Vehicle Miles Traveled (VMT) under the California

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Environmental Quality Act (CEQA) pursuant to the methodology and thresholds of significance criteria established by the County.

Policy TR-A.3 Level of Service

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.

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*

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 Fresno Council of Governments, plan for worse than LOS E on State Routes in the county.

Policy TR-A.4 Roadway Access

The County shall require that new or modified access to property abutting a roadway and to intersecting roads conform to access specifications in the Circulation Diagram and Standards section. Exceptions to the access standards may be permitted in the manner and form prescribed in the Fresno County Zoning and Subdivision Ordinances, provided that the designed safety and operational characteristics of the existing and planned roadway facility will not be substantially diminished.

Policy TR-A.6 Rights-of-Way Dedications

The County shall require dedication of right-of-way or dedication and construction of planned road facilities as a condition of land development and require an analysis of impacts of traffic from all land development projects including impacts from truck traffic. Each such project shall construct or fund improvements necessary to mitigate the effects of traffic from the project. The County may allow a project to fund a fair share of improvements that provide significant benefit to others through traffic impact fees.

Policy TR-A.9 Development Impact Fees

The County shall assess fees on new development sufficient to cover the fair share portion of that development's impacts on the local and regional transportation system.

Policy TR-A.10 Roadway Improvements

The County shall ensure that land development that affects roadway use or operation or requires roadway access to plan, dedicate, and construct required improvements consistent with the criteria in the Circulation Diagram and Standards section of this element.

Policy TR-A.25 Vehicle Miles Traveled (VMT) Threshold

Projects that would generate or attract more than 110 daily vehicle trips shall be evaluated for a transportation VMT impact on an individual basis. The threshold of significance shall be 87 percent [of] the countywide average rate of VMT. Any individual project resulting in VMT that exceeds 87 percent of the countywide average shall be required to implement project specific mitigation measures aimed at reducing VMT generated by the project.

Fresno County SB 743 Implementation Regional Guidelines (Regional Guidelines)

In January 2021, the Fresno Council of Governments (Fresno COG) published the Regional Guidelines, which contain recommended thresholds for the purposes of evaluating VMT impacts of projects in Fresno County. The Regional Guidelines “provides a guide and substantial evidence for Fresno [COG] and its member jurisdictions in setting thresholds of significance for CEQA transportation studies.” In analyzing VMT, jurisdictions located in Fresno County “can take the recommendations in the [R]egional [G]uidelines as appropriate based on their individual circumstances.” The Regional Guidelines include specific recommended screening criteria, thresholds, and guidelines for VMT analysis that may be used for land use development projects, transportation projects, and land use plans within each jurisdiction in Fresno County, including the unincorporated County (Fresno COG 2021). Specifically, Chapter 3 and 4 of the Regional Guidelines concern project screening and recommended threshold and VMT analysis for land use development projects. Chapter 6 of the Regional Guidelines, “Threshold Recommendations for Land Use Plans,” provides guidance and substantial evidence to support Fresno COG’s threshold recommendation for land use plans and CEQA transportation analyses within Fresno County. Furthermore, the Regional Guidelines include a variety of potential mitigation measures for land use development projects, transportation projects, and community/general plans that could be incorporated into individual projects to reduce project-related increases in VMT. Regarding potential mitigation, the Regional Guidelines are “intended as a guide” and recognize that “it is generally the practitioner who identifies mitigation measures to offset the specific project related impacts identified” in the applicable environmental document.

Fresno County Regional Transportation Plan/Sustainable Communities Strategy

The Fresno County 2022 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) was prepared and adopted by Fresno COG. The RTP is a blueprint that establishes a set of regional transportation goals, policies, and actions intended to guide development of the planned multi-modal transportation systems in Fresno County. It was developed through a continuing, comprehensive, and cooperative planning process, and provides for effective coordination between local, regional, state, and federal agencies. Additionally, the RTP establishes a basis on which funding applications are evaluated. Use of any state or federal transportation funds by local governments must conform to the RTP, the State Implementation Plan for air quality improvements, and the Federal Transportation Improvement Programs. Since 2018 the RTP has included the SCS, mandated by SB 375, which is intended to show how integrated land use and transportation planning can lead to lower greenhouse gas (GHG) emissions from automobiles and light trucks (Fresno COG 2022a). A 2026 update to the RTP/SCS is currently underway.

Fresno County Regional Active Transportation Plan

The Fresno COG adopted the Fresno County Regional Active Transportation Plan in February 2018, and adopted the updated plan in May 2024. The Active Transportation Plan is a comprehensive guide outlining the vision for biking, walking, and other human-powered transportation in Fresno County and a road map for achieving that vision. The Active Transportation Plan proposes a comprehensive network of countywide bikeways, trails, and sidewalks; crossing improvements at key intersections; and locations for recommended bicycle parking (Fresno COG 2025).

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4.16.3. Environmental Impact Analysis

METHODOLOGY

This section analyzes the potential for implementation of the VCIP to result in significant environmental impacts related to transportation based on the Traffic Impact Study prepared by Peters Engineering Group in April 2025, contained in Appendix E of this PEIR. Peters Engineering Group conducted twenty-four-hour traffic counts and twenty-four-hour turning-movement counts in July and September 2024 on the area roadways and intersections that potential traffic generated by the VCIP would likely use. The traffic counts provided the basis for determining existing traffic conditions (i.e., LOS) on state highways and county roads providing access to and within the Plan Area. The traffic volumes that would be generated by VCIP projects were added to baseline traffic volumes to determine the locations and extent of potential congestion associated with VCIP implementation, which provided the basis for determining mitigation measures.

SIGNIFICANCE CRITERIA

Based on Appendix G of the state CEQA Guidelines, implementation of the proposed VCIP would be considered to result in a significant transportation impact if it would:

- a. Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities.
- b. Conflict or be inconsistent with State CEQA Guidelines section 15064.3, subdivision (b).
- c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible use (e.g., farm equipment).
- d. Result in inadequate emergency access.

4.16.3.1. DIRECT AND INDIRECT EFFECTS

Impact TR-1. Conflict with a Transportation Program, Plan, Ordinance or Policy

Implementation of the VCIP Energy Resource and Infrastructure Plans would potentially result in temporary conflicts with Level of Service policies applicable to area highways and roads during VCIP project construction; however, traffic management measures would reduce the potential impacts to less than significant. (*Less-than-Significant Impact with Mitigation*)

Traffic

Pursuant to CEQA Guidelines section 15064.3(a), “a project’s effect on automobile delay shall not constitute a significant environmental impact.” Instead, “[v]ehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact.” (CEQA Guidelines, section 15064.3(b)(1).) The analysis of traffic impacts based on VMT, as required under the CEQA Guidelines, is presented under Impact TR-2 below.)

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Although traffic congestion is no longer recognized as a significant impact under CEQA, the general plans of counties and cities typically require a minimum LOS on roadways and at intersections. The following analysis is focused on the potential for VCIP implementation to result in exceedances of local LOS policies for traffic. This analysis is based on the Traffic Study prepared by Peters Engineering Group in June 2025, which is contained in Appendix E of this PEIR.

Methodology

The Traffic Study analyzes potential traffic impacts expected from VCIP buildout. The intention is to identify the places and times when VCIP traffic generation would likely result in traffic issues on the roadway network, and to identify feasible mitigation strategies which could be further refined and applied at the project level. Detailed traffic impact studies would be required at the project level, based on the details of the construction and operations plans for each potential VCIP project, which would identify project-specific impacts and, if required, feasible mitigation measures during project-level review and approval.

Traffic studies do not typically focus on construction traffic, which is usually temporary and less substantial than operational traffic for most types of projects. For solar and battery energy storage system (BESS) projects, the opposite is the case, with construction traffic being temporary but substantial, and operational traffic being very light. Given the anticipated large scale and long duration of potential VCIP implementation, different areas within the Development Focus Areas (DFAs) would be under construction at different times and therefore subject to peak traffic volumes in different years. Thus, the analysis of traffic impacts is closely tied to the planned phasing for VCIP development over the contemplated 10-year buildout period.

The phasing of VCIP buildout of solar and BESS projects would depend on the phasing of the backbone infrastructure consisting of collection substations and connecting transmission lines. It is anticipated that these facilities would be constructed progressively from north to south through the Plan Area, with the five collection substations and their connecting transmission lines constructed during the first five years of VCIP implementation. It is expected that the Newpoint substation (Substation 1) would be completed in 2029, which would facilitate development of the first 2,300 megawatts (MW) of solar/BESS around that substation during 2029. The other four collection substations would be completed sequentially from 2030-2033, which would facilitate 2,300 MW of solar/BESS development around each of those substations, respectively, in each of those successive years. In subsequent construction years (2034-2038), the backbone infrastructure for the VCIP would be complete, so solar/BESS development would be more evenly distributed as the remaining capacity of all five collections substations is utilized from 2034-2038. Therefore, the VCIP construction activities would be most geographically concentrated in the first five years, and much less geographically concentrated in the final five buildout years. Therefore, based upon the contemplated construction schedule, the greatest potential traffic impacts would occur during the first five years of VCIP implementation.

The Traffic Study focused on the early peak construction years of 2029, 2031, and 2033 when the most intense construction activity would occur around VCIP collection Substations 1, 3, and 5. The Traffic Study did not focus on traffic conditions in 2030 and 2032, since the conditions on the affected roadways would not vary substantially from the prior and following years that were studied (e.g., 2029, 2031, 2033) (see Appendix E, p. 8). Thus, the three study years of 2029, 2031, and 2033 represent the greatest extent of the VCIP's reasonably foreseeable impacts related to traffic conditions that would occur in the northern, central, and southern sections of the Plan Area. In the subsequent construction years of 2034-2038, potential VCIP project development would be more evenly distributed, which would result in much lower traffic volumes on any given roadway used as a construction access route in those latter buildout years. Since impacts related to traffic conditions in those latter buildout years

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would not approximate the conditions anticipated in the early development years, it is not necessary to evaluate the VCIP-wide traffic impacts for those years to identify VCIP-level measures which would provide feasible LOS mitigation for all potential VCIP projects. In addition, each VCIP project would be subject to its own project-level traffic study which would provide a location and time-specific analysis of project traffic impacts as well as refined mitigation measures tailored to the unique circumstances of each project.

Significance Criteria

The Transportation Research Board *Highway Capacity Manual, 7th Edition*, (HCM) defines LOS as, “a quantitative stratification of a performance measure or measures representing quality of service. The measures used to determine LOS for transportation system elements are called *service measures*. The HCM defines six levels of service, ranging from A to F, for each service measure or combination of service measures. LOS A represents the best operating conditions from the traveler’s perspective and LOS F the worst.” (See Appendix E, p. 4)(TRB 2022). The LOS characteristics for road segments are presented in Table 4.16-1.

TABLE 4.16-1
LEVEL OF SERVICE CHARACTERISTICS FOR ROAD SEGMENTS

Level of Service	Description
A	Free-flow operations. High operating speeds with a small amount of platooning.
B	Reasonably free-flow operations. Speed reductions are present and platooning becomes noticeable.
C	Most vehicles traveling in platoons and freedom to maneuver noticeably restricted.
D	Platooning increases significantly and speeds begin to decline.
E	Demand approaching capacity. Speeds seriously curtailed.
F	Demand exceeds capacity and heavy congestion exists. Unstable flow.

Source: Peters Engineering Group

Based on the level of service policies of the agencies whose roadways would be subject to potential VCIP project traffic, the following significance criteria were identified by Peters Engineering Group:

For purposes of the Traffic Study, a traffic issue may be identified on State highways and roadways in Fresno County, the City of Firebaugh, the City of Mendota, and the City of Kerman if the addition of the traffic generated by the VCIP implementation results in any one of the following:

- Triggers an intersection operating at acceptable LOS (A, B, or C) to operate at unacceptable levels of service (D, E, or F);
- Increases the average delay for a study intersection that is already operating at unacceptable LOS (D, E, or F) by 5.0 seconds or more.

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For purposes of the Traffic Study, a traffic issue may be identified on Madera County roadways if the addition of the traffic generated by VCIP implementation results in any one of the following:

- Triggers an intersection operating at acceptable LOS (A, B, C, or D) to operate at unacceptable levels of service (E or F);
- Increases the average delay for a study intersection that is already operating at unacceptable LOS (E or F) by 5.0 seconds or more.

The highest traffic volumes would be generated during the construction and decommissioning phases of the potential VCIP projects, and very low traffic volumes would be generated during the operation of VCIP facilities. Therefore, the Traffic Study focused on construction traffic. As such, any level of service standards that would not be temporarily met during construction would be addressed by temporary measures to mitigate temporary impacts.

Construction Traffic

Baseline Conditions

The analysis of traffic impacts was based on traffic counts conducted in 2024 on the affected roadway segments, and at key intersections, with traffic data collected at 15-minute intervals for 24 hours at each location. To establish future baseline conditions for the construction years, the counted traffic volumes were increased by one percent per year up to the specific construction year under study based on regional growth projections (see Appendix E). The estimated worker commute volumes and truck deliveries generated during project construction were added to the baseline volumes to determine traffic conditions with project construction traffic added.

Trip Generation and Distribution

During the peak construction years of 2029-2033, there will be a maximum of approximately 6,000 construction workers and supervisors commuting to the potential VCIP project sites. This number includes construction workers on all VCIP projects including solar and BESS facilities, gen-tie lines, collection substations, and connecting transmission line segments. Based on experience with the construction of similar solar projects in the region, it is expected that at least 25 percent of workers will carpool to the work sites. Deliveries will primarily arrive from the Port of Oakland for solar components, with other materials and equipment originating from various California ports, as well as the cities of Fresno and Sacramento. Aggregate and concrete are expected to be delivered from the Los Banos area or the Coalinga Area, depending on the location of the specific VCIP project within the Plan Area.

Road Segment Analysis

Detailed road segment analyses were conducted for the peak construction years 2029, 2031, and 2033. Given the concentrated development patterns anticipated for these years, traffic impacts during these years were considered representative of the most impacted traffic conditions for the northern, central, and southern sections of the Plan Area that would be reasonably foreseeable during the 10-year VCIP buildout period.

Table 4.16-2 shows LOS for the most affected roadways providing construction access to the northern VCIP Plan Area under baseline conditions in 2029, along with LOS conditions with peak daily VCIP construction traffic added.

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TABLE 4.16-2
2029 ROAD SEGMENT ANALYSIS SUMMARY – VCIP CONSTRUCTION TRAFFIC
(NORTHERN SECTION OF VCIP PLAN AREA)

Road	Road Segment and Direction of Travel	Peak Travel Period	Target LOS	Baseline LOS (2029) ¹	LOS with VCIP Projects ²	No. of 15-Minute Periods Impacted by VCIP ³
Whitesbridge Rd (SR-180), Kerman	E. of Madera Ave (SR-145), WB	AM	C	C	E/F ⁴	1 ⁵
Whitesbridge Rd (SR-180), Kerman	E. of Madera Ave (SR-145), EB	PM	C	C	D, E/F	2 ⁵
Whitesbridge Rd (SR-180), Kerman	W. of Madera Av (SR-145), WB	AM	C	C	E/F	1
Whitesbridge Rd (SR-180), Kerman	W. of Madera Ave (SR-145), EB	PM	C	C	E/F	1
Oller St (SR-180), Mendota	N. of Belmont Ave, NB	AM	C	C	E/F	1
Oller St (SR-180), Mendota	N. of Belmont Ave, SB	PM	C	C	E/F	2
Belmont Ave, Mendota	W. of Oller St, WB	AM	C	C	E/F	1
Belmont Ave, Mendota	W. of Oller St, EB	PM	C	C	E/F	1
12 th St, Firebaugh	W. of SR-33, WB	AM	C	C, D	D, E/F	8
12 th St, Firebaugh	W. of SR-33, EB	PM	C	C, D	D, E/F	5
13 th St, Firebaugh	E. of SR-33, WB	AM	C	B	D, E, F	4
13 th St, Firebaugh	E. of SR-33, EB	PM	C	B, C	D, E, F	4
N St, Firebaugh	N. 13 th St, NB	AM	C	B	D, E/F	2
N St, Firebaugh	N. 13 th St, SB	PM	C	B	D, E/F	2
Ave 7, Madera County	E. of Firebaugh Blvd, WB	AM	D	B, C	E, F	2
Ave 7, Madera County	E. of Firebaugh Blvd, EB	PM	D	B	E, F	3
Ave 7½, Madera County	W. of Firebaugh Blvd, WB	AM	D	C	E, F	3
Ave 7½, Madera County	W. of Firebaugh Blvd, EB	PM	D	C	E, F	3
Dickenson Ave, Fresno County	S. of Jensen Ave, SB	AM	C	D	D	0 ⁶
Nees Ave, Fresno County	W. of Russell Ave, EB	AM	C	B	D	1
Nees Ave, Fresno County	W. of Russell Ave, WB	PM	C	B	D	1
Bullard Ave, Fresno County	E. of Washoe Ave, WB	AM	C	B	D, F	2
Bullard Ave, Fresno County	E. of Washoe Ave, EB	PM	C	B	D, E	3
Belmont Ave, Fresno County	E. of San Diego Ave, WB	AM	C	B, D	D, F	2
Belmont Ave, Fresno County	E. of San Diego Ave, EB	PM	C	B	D, E	3
California Ave, Fresno County	E. of San Diego Ave, WB	AM	C	D	D	0 ⁶
Panoche Rd, Fresno County	E. of I-5, EB	AM	C	B	E	1
Panoche Rd, Fresno County	E. of I-5, EB	PM	C	B	E	1

¹ Traffic conditions were analyzed in 15-minute increments during the peak VCIP commute periods of 5:00–7:00 AM and 3:30–6:00 PM. While each 15-minute period had its own LOS, the table shows only the range of LOS for each AM and PM period.

² **Bold** font indicates where LOS standard is not met during at least one 15-minute period.

³ Number of Periods where VCIP traffic results in LOS target not being met.

⁴ LOS “E/F” indicates traffic conditions are on the boundary between LOS E and F.

⁵ In AM peak, there are eight 15-min. periods; in PM peak, there are ten 15-min. periods.

⁶ Roadway where Baseline LOS is D, but VCIP projects add no traffic to the roadway.

Source: Peters Engineering Group

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The table only includes road segments where the target LOS is not met during at least one 15-minute period during peak AM or PM commute periods. The majority of study roadway segments within the Plan Area and vicinity would continue to operate at acceptable service levels in 2029 with VCIP construction traffic added.

As shown in Table 4.16-2, the LOS on 12 roadway segments would decrease from acceptable LOS C or better to LOS D or worse, typically during both the AM and PM peak periods, because of VCIP project construction traffic in 2029. Most LOS decreases would occur from 6:00 to 6:30 AM and 4:30 to 5:00 PM, coinciding with the times that the majority (70%) of VCIP workers are expected to arrive for work in the morning and depart in the afternoon. Few if any workers would arrive after 7:00 AM, and relatively few would depart after 5:00 PM. Along most roadway segments, the unacceptable LOS (D, E, or F) would occur during three or fewer 15-minute segments during the AM or PM peak period, reflecting the concentrated nature of construction worker travel to and from the work sites. Along most of the affected roadway segments, LOS F would occur during one 15-minute period during the AM and PM peak periods, indicating heavy congestion, with the preceding and/or following 15-minute time periods typically subject to LOS E or D where travel speeds would be reduced but with less congestion.

Table 4.16-3, below, shows LOS for the most affected roadways providing construction access to the central VCIP Plan Area under baseline conditions in 2031, along with LOS conditions with peak daily VCIP project construction traffic added. As shown in the table, in 2031 the LOS on 13 roadway segments would decrease from acceptable LOS C or better to LOS D or worse (or baseline LOS D conditions are worsened by project traffic), typically during both the AM and PM peak periods, because of VCIP project construction traffic. Most LOS decreases would occur from 6:00 to 6:30 AM and 4:30 to 5:00 PM, coinciding with the times that the majority (70%) of VCIP workers are expected to arrive for work in the morning and depart in the afternoon. Along most roadways, the unacceptable LOS (D, E, or F) would occur during three or fewer 15-minute segments during the AM or PM peak period, reflecting the concentrated nature of construction worker travel to and from the work sites. Along half of the affected roadway segments, LOS F would occur during one or two 15-minute periods during the AM and/or PM peak periods, indicating heavy congestion, with the preceding and/or following 15-minute time periods typically subject to LOS E or D where travel speeds would be reduced but with less congestion.

Table 4.16-4, below, shows LOS for the most affected roadways providing construction access to the southern VCIP Plan Area under baseline conditions in 2033, along with LOS conditions with peak daily VCIP project construction traffic added. As shown in the table, in 2033 the LOS on five roadway segments would decrease from acceptable LOS C or better to LOS D or worse (or a roadway with baseline LOS D is subject to increased traffic from VCIP projects), typically during both the AM and PM peak periods, as a result of VCIP project construction traffic. The most substantial LOS decreases occur from 6:00 to 6:30 AM and 4:30 to 5:00 PM, coinciding with the times that the majority (70%) of VCIP workers are expected to arrive for work in the morning and depart in the afternoon. Along most roadways, the unacceptable LOS (D, E, or F) would occur during four or five 15-minute segments during the AM or PM peak period. Along four of the affected roadway segments, LOS F would occur during four 15-minute periods during the AM and/or PM peak periods, indicating heavy congestion, with the preceding and/or following 15-minute time periods typically subject to LOS E or D where travel speeds would be reduced but with less congestion.

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TABLE 4.16-3
2031 ROAD SEGMENT ANALYSIS SUMMARY – VCIP CONSTRUCTION TRAFFIC
(CENTRAL SECTION OF VCIP PLAN AREA)

Road	Road Segment and Direction of Travel	Peak Travel Period	Target LOS	Baseline LOS (2031) ¹	LOS with VCIP Projects ²	No. of 15-Minute Periods Impacted by VCIP ³
Dickenson Ave	S. of Jensen Ave, SB	AM	C	B, C, D	D, E, F	4 ⁴
Dickenson Ave	S. of Jensen Ave, NB	PM	C	B, C	E, F	4 ⁴
McMullin Grade,	W. of Madera Ave (SR-145), WB	AM	C	C	D, E, F	6
McMullin Grade	W. of Madera Ave (SR-145), EB	PM	C	B, C	E, F	4
Manning Ave	West of James Ave, EB	AM	C	B	D, F	2
Manning Ave	West of James Ave, WB	PM	C	B	D, E	3
12 th St, Firebaugh	W. of SR-33, WB	AM	C	D	D	4
12 th St, Firebaugh	W. of SR-33, EB	PM	C	D	D	0 ⁵
Belmont Ave	E. of San Diego Ave, WB	AM	C	D	D	1
California Ave	E. of San Diego Ave, WB	AM	C	D	D	0 ⁵
Derrick Ave (SR-33)	North of Adams Ave, SB	AM	C	B	E	1
Derrick Ave (SR-33)	North of Adams Ave, NB	PM	C	B	E	1
Manning Ave	East of Derrick Ave, EB	AM	C	B	D, F	2
Manning Ave	East of Derrick Ave, WB	PM	C	B	D, E	2
Manning Ave	East of I-5, EB	AM	C	B	D	1
Manning Ave	East of I-5, WB	PM	C	B	D	1
Kamm Ave	East of Napa Ave, WB	AM	C	B	D, E, F	5
Kamm Ave	East of Napa Ave, EB	PM	C	B	D, F	4
San Mateo Ave	North of Clarkson Ave, NB	AM	C	B	D, F	2
		PM	C	B	D, F	3
San Mateo Ave	North of Clarkson Ave, SB	AM	C	B	D, F	2
		PM	C	B	D, F	3
Clarkson Ave	West of San Mateo, WB	AM	C	B	E	1
Clarkson Ave	West of San Mateo, EB	PM	C	B	E, D	2
Clarkson Ave	East of Santa Clara Ave, WB	AM	C	B	E	1
Clarkson Ave	East of Santa Clara Ave, EB	PM	C	B	D, E	2
Elkhorn Ave	East of Lassen Ave, WB	AM	C	B	E	1
Elkhorn Ave	East of Lassen Ave, EB	PM	C	B	E	1
Lassen Ave (SR-269)	South of Elkhorn Ave, NB	AM	C	B	D	1
Lassen Ave (SR-269)	South of Elkhorn Ave, SB	PM	C	B	D	1
Lassen Ave (SR-269)	North of SR 198, NB	AM	C	B	D	1
Lassen Ave (SR-269)	North of SR 198, SB	PM	C	B	D	1

¹ Traffic conditions were analyzed in 15-minute increments during the peak VCIP commute periods of 5:00–7:00 AM and 3:30– 6:00 PM. While each 15-minute period had its own LOS, the table shows only the range of LOS for each AM and PM period.

² **Bold** font indicates where LOS standard is not met during at least one 15-minute period.

³ Number of Periods where VCIP traffic results in LOS target not being met.

⁴ In AM peak, there are eight 15-min. periods; in PM peak, there are ten 15-min. periods.

⁵ Roadway where Baseline LOS is D, but VCIP projects add no traffic to the roadway.

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TABLE 4.16-4
2033 ROAD SEGMENT ANALYSIS SUMMARY
(SOUTHERN SECTION OF VCIP PLAN AREA)

Road	Road Segment and Direction of Travel	Peak Travel Period	Target LOS	Baseline LOS (2031) ¹	LOS with VCIP Projects ²	No. of 15-Minute Periods Impacted by VCIP ³
Dickenson Ave	S. of Jensen Ave, SB	AM	C	B, C, D	D, E, F	4 ⁴
Dickenson Ave	S. of Jensen Ave, NB	PM	C	B, C	E, F	4 ⁴
McMullin Grade,	W. of Madera Ave (SR-145), WB	AM	C	C	D, E, F	5
McMullin Grade	W. of Madera Ave (SR-145), EB	PM	C	B, C, D	D, E, F	4
Madera Ave (SR-145)	S. of Whitesbridge (SR-180), SB	AM	C	C	E/F⁵	1
Madera Ave (SR-145)	S. of Whitesbridge (SR-180), SB	PM	C	C	E/F⁵	1
12 th St, Firebaugh	W. of SR-33, WB	AM	C	D	D	0 ⁶
12 th St, Firebaugh	W. of SR-33, EB	PM	C	D	D	0 ⁶
Belmont Ave	E. of San Diego Ave, WB	AM	C	D	D	0 ⁶
California Ave	E. of San Diego Ave, WB	AM	C	D	D	0 ⁶
Lassen Ave (SR-269)	South of Elkhorn Ave, NB	AM	C	C	D, E, F	5
Lassen Ave (SR-269)	South of Elkhorn Ave, SB	PM	C	C	E, F	4
Lassen Ave (SR-269)	North of SR 198, SB	AM	C	B	D, E, F	5
Lassen Ave (SR-269)	North of SR 198, NB	PM	C	B	D, F	4

¹ Traffic conditions were analyzed in 15-minute increments during the peak VCIP commute periods of 5:00–7:00 AM and 3:30–6:00 PM. While each 15-minute period had its own LOS, the table shows only the range of LOS for each AM and PM period.

² **Bold** font indicates where LOS standard is not met during at least one 15-minute period.

³ Number of 15-minute periods where VCIP traffic results in LOS target not being met.

⁴ In AM peak, there are eight 15-min. periods; in PM peak, there are ten 15-min. periods.

⁵ LOS “E/F” indicates traffic conditions are on the boundary between LOS E and F.

⁶ Roadway where Baseline LOS is D, but VCIP projects add no traffic to the roadway.

Source: Peters Engineering Group

As discussed under “Methodology” above, the Traffic Study did not focus on traffic conditions in 2030 and 2032, since the conditions on the affected roadways in these years would not vary substantially from the prior and following years that were studied (i.e., 2029, 2031, and 2033). Thus, the three study years are considered representative of the most impacted traffic conditions that would occur in the northern, central, and southern portions of the Plan Area. In the subsequent construction years of 2034-2038, VCIP project development would be more evenly distributed throughout the Plan Area, which would result in much lower traffic volumes on any given roadway used as a construction access route in those latter buildout years. Few road segments are expected to degrade to unacceptable service levels during those years because of VCIP project construction traffic. Since traffic conditions in those latter buildout years would be less impacted than the conditions anticipated in the early development years, it is not necessary to evaluate the VCIP plan-wide traffic impacts for those years. The mitigation measures identified to address the relatively greater traffic impacts associated with the early construction years would apply to the latter years. Moreover, each potential VCIP project would be subject to its own project-level traffic study which would provide a location and time-specific analysis of project traffic impacts as well as refined mitigation measures tailored to the unique circumstances of each project.

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Intersection Analysis

Based on the results of the road segment analysis for 2029, key intersections along the travel routes for potential VCIP construction traffic were identified for detailed analysis. The selected intersections represent the main signalized intersections in the cities of Firebaugh, Mendota, and Kerman which would be subject to substantial construction traffic from potential VCIP projects in 2029. While the road segment analysis identified the potential impacts of VCIP project construction on traffic flow for each segment, the more detailed intersection analysis illustrates specific traffic constraints at each signalized intersection. This analysis enables evaluation of traffic conditions for 12 distinct through-traffic and turning movements at each location, and the most affected movement can be identified (see Appendix G, Intersection Analysis to Appendix E of this PEIR). This quantification of direction-specific worst-case traffic impacts (delay and congestion) at each intersection facilitates the detailed identification of corresponding mitigation measures.

Table 4.16-5 shows the results of the intersection analysis for 2029. As shown in the table, the LOS at each selected intersection degrades from acceptable LOS C or better under 2029 baseline conditions, to LOS F in both the AM and PM peak periods, with the addition of VCIP construction traffic. This indicates that long queues would occur in the critical movements at the affected intersections during the AM and PM commute periods. Unless mitigated, the unacceptable LOS resulting from VCIP implementation would conflict with the LOS policies of the County of Fresno, Caltrans, and the affected cities, which would represent a *significant impact*.

TABLE 4.16-5
2029 INTERSECTION ANALYSIS SUMMARY
(NORTHERN SECTION OF VCIP PLAN AREA)

Intersection	Time Period	Level of Service	
		2029 Baseline	2029 with VCIP Projects
N St (SR 33) / 12 th St, Firebaugh	6:15 – 6:30 a.m.	B	F
	4:30 – 4:45 p.m.	C	F
N St (SR 33) / 13 th St, Firebaugh	6:15 – 6:30 a.m.	A	F
	4:30 – 4:45 p.m.	A	F
Oller St (SR 180) / Belmont Ave (one-way stop), Mendota	6:00 – 6:15 a.m.	B	F
	4:45 – 5:00 p.m.	C	F
Whitesbridge Rd (SR 180) / Madera Ave (SR 145), Kerman	6:00 – 6:15 a.m.	B	F
	4:45 – 5:00 p.m.	B	F

Source: Peters Engineering Group

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It is noted that the intersection analysis was only performed for the 2029 construction year. This is because several factors indicate that the impacts to the selected intersections in 2029 would represent the most impacted traffic conditions during VCIP implementation. First, 2029 would be one of the years planned for the most VCIP development with the largest number of construction workers and truck deliveries. Second, the northern-most portion of the Plan Area would be developed in 2029, which is where the roadway links between the construction sites and the Fresno area population centers (i.e., labor pools) are the fewest, compared to roadway links to the central and southern portions of the Plan Area. This relative lack of roadway links would thereby limit commuting workers to two direct travel routes (i.e., SR-180 west through Kerman and Mendota; and Avenue 7 west through Firebaugh). Third, these travel routes to the northern portion of the Plan Area pass through three urban centers with signalized intersections, which would likely cause congestion at those locations. In contrast, traffic added to the central and southern portions of the Plan Area would be more dispersed and would not pass through urban centers with signalized intersections. Also, because travel patterns are subject to change over time, complex vehicle movements at intersections become less predictable over time. As such, the accuracy of intersection analyses based on conditions measured at 15-minute intervals would degrade to the point of being unusable over an extended span of time, like that associated with potential VCIP implementation. Therefore, evaluating potential intersection impacts up to 15 years in the future would have limited validity. Moreover, the objective of this analysis is to provide guidance as to the magnitude of reasonably foreseeable impacts that may be expected when any project-specific traffic analyses are conducted. The roadway segment analysis provides sufficient guidance as to the general level of traffic impacts that can be expected in future development years, and the intersection analysis provides sufficient plan level guidance regarding the level of mitigation measures that would be required at the project level.

Mitigation Measure TR-1: Traffic LOS Mitigation for Project Construction and Decommissioning

To reduce potential construction traffic LOS impacts resulting from VCIP implementation, the following traffic mitigation measures are identified for application at the project stage, with applicability depending on the individual circumstances of each project, as follows:

- 1) Prior to the start of construction (and decommissioning), the project proponent shall submit a Construction Traffic Management Plan (Plan) to the approving agency for review and approval. The Plan shall be supported by a Traffic Impact and Mitigation Report (Report) which demonstrates that the measures proposed in the Plan would maintain the Level of Service (LOS) on all roadways and intersections affected by project construction/decommissioning traffic to LOS C or better. The mitigation measures in the Plan shall include the following measures.

- a. Provide shuttle bus service for commuting construction/decommissioning workers from population centers (e.g., Fresno metro area) to and from VCIP construction sites.

Mitigation shall consist solely of shuttle bus service, as specified in 'a', since shuttle bus service would demonstrably mitigate LOS impacts. However, if additional mitigations, such as those listed 'b' through 'e' below, can be quantitatively demonstrated to achieve the applicable LOS standards, then consideration can be given to implementation of a combination of mitigation measures, consisting of 'a,' at a minimum, and some combination of 'b' through 'e' below, or their functional equivalents.

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- b. Provide ridesharing information and matching service to facilitate carpooling or vanpooling, particularly for construction/decommissioning workers commuting from more remote areas where shuttle bus service may not be made available.
 - c. Schedule daily construction/decommissioning activity so that start and finish times are staggered to reduce concentration of worker traffic particularly during the peak periods of existing traffic on affected roadways.
 - d. Actively encourage the use of mobile phone applications that provide information on real-time traffic conditions to identify alternative travel routes for construction/decommissioning workers and delivery trucks to reduce traffic volumes on the main travel routes to the VCIP project sites.
 - e. Limit truck deliveries of equipment and materials to non-peak traffic periods (e.g., avoid unnecessary travel from 5 to 8 AM and 3 to 6 PM).
- 2) In cases where other VCIP projects are planned to be constructed/decommissioned in the vicinity of the proposed project, and whose construction/decommissioning schedules overlap with the proposed project construction/decommissioning schedule, the Report shall include a report on coordination of traffic mitigation efforts by the proponents of the concurrent projects, and shall include analysis which demonstrates that the combined construction/decommissioning traffic impacts on any affected roadways and intersections would be fully mitigated so as not to result in collective degradation of service levels below LOS C. The Report shall also include a detailed summary of specific fair share mitigation measures to be implemented by each concurrent project (e.g., number of shuttle buses required for each project). Alternative approaches for implementing mitigations for collective traffic LOS impacts may be partially substituted for the recommended approach provided that it is quantitatively demonstrated in project-specific documents approved by the approving agency that the alternative approach results in maintenance of LOS C or better on all affected roadways. To coordinate the traffic studies involving multiple projects, the District or its designee shall establish a management entity to provide such coordination as needed, and to monitor the effectiveness of the planned mitigation measures.

Effectiveness of Mitigation

A combination of the above mitigation measures could be applied to feasibly maintain roadway and intersection LOS at acceptable levels during construction and decommissioning of potential VCIP projects. The specific measures applied to each individual VCIP project would be determined by the traffic studies conducted at the project stage of review. The required traffic mitigations (which must be achieved by the mitigation measures identified above or their functional equivalents) would be achievable and feasible for implementation at the project level. Peters Engineering Group calculated the number of trips that must be removed at each intersection to restore LOS to acceptable levels. The results are shown in Table 4.16-5, which indicates that 15 to 25 shuttle buses for workers would be required to maintain service levels at acceptable LOS B or C, depending on the intersection.

Therefore, it can be concluded that the use of buses would fully mitigate the LOS impact at all affected intersections. Since intersection operations typically govern LOS as compared to road segment operations, the number of buses required for each intersection is also expected to improve road segment LOS to acceptable levels. Although the use of shuttle buses would demonstrably mitigate LOS impacts, a combination of mitigation measures, including shuttle bus service at a minimum, would be acceptable if their combined efficacy in providing full mitigation is demonstrated at the project level.

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TABLE 4.16-5
2029 INTERSECTION ANALYSIS – MITIGATED CASE WITH BUSES

Intersection	Time Period	Number of Buses Needed	Level of Service
N St (SR 33) / 12 th St	6:15 – 6:30 a.m.	25	C
	4:30 – 4:45 p.m.	23	C
N St (SR 33) / 13 th St	6:15 – 6:30 a.m.	25	B
	4:30 – 4:45 p.m.	23	B
Oller St (SR 180) / Belmont Ave	6:00 – 6:15 a.m.	22	C
	4:45 – 5:00 p.m.	20	C
Whitesbridge Rd (SR 180) / Madera Ave (SR 145)	6:00 – 6:15 a.m.	15	B
	4:45 – 5:00 p.m.	15	C

Source: Peters Engineering Group

At the project level, a combination of mitigation measures could be employed, which may or may not include 15 to 25 buses as indicated above. However, it would be the responsibility of the project proponents to demonstrate, through the completion of traffic impact studies, that any proposed combination of mitigation measures would achieve the level of mitigation required to maintain acceptable service levels on the affected roadways and intersections.

The above analysis of LOS impacts is based on the planned development of 2,300 MW of solar/BESS on 15,000 acres, plus supporting infrastructure, in the northern portion of the Plan Area in a single year (2029). It is anticipated that this would involve multiple projects of varying sizes with several project proponents (i.e., 2,300 MW of solar/BESS construction could be divided among nine typical-sized projects of ~250 MW each). This rate of construction would be anticipated for all ten years of VCIP buildout. Thus, all projects to be constructed concurrently within a given area would need to coordinate and implement collective mitigation measures required to maintain acceptable LOS on the affected construction travel routes. This would require a determination on the number of shuttle buses, or combination of traffic mitigations needed to maintain acceptable LOS and mitigate the collective impact. This would require the establishment of a management entity to provide the coordination needed, and to monitor implementation of mitigations for effectiveness, and also to adjust as needed. This would likely involve a cooperative arrangement between the District and the master developer of the VCIP. In summary, the LOS impacts from construction traffic generated by the VCIP projects would be *less than significant with mitigation*.

Operational Traffic

Traffic generated during potential VCIP project operations would be very light, given the small number of workers who would travel to the VCIP facilities. For example, a typical 250-MW solar/BESS facility would have up to ten permanent operations staff, plus an average of five maintenance workers who would visit the site periodically for panel cleaning and vegetation management. Thus, about 15 workers would be onsite on

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any given day, resulting in a total of 30 daily trips to and from a typical facility. The VCIP solar/BESS facilities would be distributed over the entire 50-mile length of the Plan Area, resulting in a highly dispersed travel pattern for operational workers. Thus, traffic volumes on any travel route would be negligible, and the LOS on any given roadway or intersection would not degrade to unacceptable LOS due to operational traffic from VCIP solar/BESS facilities. Therefore, the LOS impacts from operational traffic generated by the VCIP projects would be *less than significant*.

Decommissioning Traffic

Decommissioning activity would follow the same overall phasing pattern as construction activity, although actual decommissioning likely would not follow such a rigid schedule or geographic concentration in a given year. The intensity of activity during decommissioning of each VCIP facility is assumed to be the same as construction, although it would likely be substantially less given the lower intensity of activity involved due to generally less equipment use and fewer haul trips. Assuming traffic volumes generated during decommissioning would be similar to those associated with construction, the resulting LOS impacts would be approximately the same as reported above for the construction period. However, due to the methodologies used to calculate traffic impacts, which rely on detailed twenty-four-hour traffic and turning-movement counts, any attempt to estimate traffic impacts that would occur 40 to 50 years in the future would be speculative. Moreover, the decommissioning of each VCIP facility would be subject to the measures identified in MM TRA-1, which would ensure that overall trip generation would be reduced to levels where acceptable LOS conditions are maintained on all affected roadways and intersections. Therefore, traffic LOS impacts resulting from decommissioning of VCIP facilities would be *less-than-significant with mitigation*.

Public Transit

The FCRTA is the primary provider of public transit services in the rural areas of Fresno County. Service is provided through several transit subsystems that operate throughout the rural areas of the County. The Plan Area is served by five transit systems which provide service to all unincorporated communities in the Plan Area as well as nearby cities and the Fresno metropolitan area, connecting residents to employment and service centers in the region. During the VCIP buildout period, construction workers and trucks would utilize area roadways to travel to and from the various project sites. The travel routes used by construction traffic would include portions of the transit routes used by FCRTA transit services. However, all transit schedules begin at 7 AM or later (i.e., after the peak commute periods for VCIP construction workers). During the PM peak period, transit services and VCIP worker commutes would overlap. The traffic added by potential VCIP project construction may cause minor reductions in speed along some transit route segments. Some DFAs are also located along transit route segments, and slow-moving trucks or worker traffic at construction entrances may result in slight transit delays. Any slowdowns or delays in transit service resulting from VCIP construction would be temporary and would not permanently affect transit service in the Plan Area or beyond. In 2023, FCRTA completed a comprehensive systemwide analysis with a view to increasing transit access in the region. The study contained a number of recommendations for improving transit service, and noted the need to facilitate greater acceptance of home to work commuter transportation services through subsidized carpooling, commuter vanpooling, and farm labor vanpooling. The study noted that commercial vanpooling providers have provided more than 450 vehicles in the south San Joaquin Valley, including Fresno County (FCRTA 2023). In summary, VCIP implementation would not conflict with plans or policies for regional transit service and the impact would be *less than significant*.

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Non-Motorized Transportation

Currently, there are no existing designated bicycle routes within the Plan Area. The Fresno County Bicycle and Regional Trails Master Plan includes one planned Class II Bikeway within the Plan Area. A Class II Bikeway is an on-road bike lane up to six feet wide alongside the vehicle travel lane and separated from the vehicle lane by a painted solid wide stripe. The planned Class II Bikeway extends west from Mendota along Belmont Avenue to Fairfax Avenue where it turns north and extends to Shields Avenue, where it turns west and continues to I-5. The VCIP includes three DFAs that front onto this planned bikeway along portions of Belmont, Fairfax, and Shields Avenues. The development of the adjacent DFAs with solar/BESS facilities would not include physical alterations within the road rights-of-way apart from driveway entrances. The VCIP development would not interfere with future roadway improvements for the planned bikeway. As such, VCIP implementation would not conflict with regional bikeway plans and the impact would be *less than significant*.

There are no existing or planned recreational trails or pedestrian facilities within the Plan Area. Therefore, VCIP implementation would not conflict with plans for pedestrian access and mobility and the impact would be *less than significant*.

Impact TR-2. Conflict with CEQA Guidelines Section 15064.3, Subdivision (b) (VMT)

Implementation of the VCIP Energy Resource and Infrastructure Plans would not conflict with the applicable VMT reduction requirements established under CEQA Guidelines section 15064.3(b). (*Less-than-Significant Impact with Mitigation*)

As discussed in Section 4.16-2. *Regulatory Context* above, section 15064.3 of the CEQA Guidelines was included in the comprehensive amendments to the state CEQA Guidelines which took effect on December 28, 2018. CEQA Guidelines Section 15064.3, the implementing regulation for SB 743, sets forth revised criteria for analyzing transportation impacts of proposed projects. For land use projects, this section states that “[v]ehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact.” The purpose in applying VMT as the analytical metric is to further the state’s long-term GHG reduction goals by reducing fuel consumption in the transportation sector, specifically through reductions in per capita VMT associated with new land use projects (Pub. Resources. Code, section 21099(b)(1)). Each public agency then has discretion to develop thresholds of significance used to determine the significance of impacts related to VMT (*Id.* at section 21099, subds. (b)(4) &(e); CEQA Guidelines, sections 15064.7). As mentioned, Fresno County has adopted a VMT threshold of 87 percent of the County-wide average VMT (i.e., new development projects must generate operational VMT that is 13 percent below the County average VMT).

To provide guidance for implementing SB 743, the Governor’s Office of Planning and Research (OPR) (now referred to as the Governor’s Office of Land Use and Climate Innovation) issued a Technical Advisory in 2018 (Technical Advisory). To address transportation impacts from small projects, the Technical Advisory recommends the application of “screening thresholds” to identify when a project would be expected result in a less-than-significant transportation impact without conducting a detailed study. The Technical Advisory states that, in general, projects that generate fewer than 110 trips per day may be assumed to cause a less-than-significant transportation impact (OPR 2018, p. 12). This same screening threshold is included in Fresno County General Plan Policy TR-A.25, which provides: “projects that would generate or attract more than 110 daily vehicle trips shall be {00080666.1}

evaluated for a transportation VMT impact on an individual basis.” Regarding land use plans, the Technical Advisory further recommends that “agencies should analyze VMT outcomes of land use plans across the full area over which the plan may substantively affect travel patterns, including beyond the boundary of the plan or the jurisdiction’s geography.” (OPR 2018, p. 18.) It further provides that a land use plan may have a significant impact on transportation if proposed new uses would in the aggregate exceed the respective thresholds. (*Ibid.*)

According to Fresno COG’s Regional Guidelines, this recommendation regarding land use plans contained in the Technical Advisory “refers to a threshold of exceeding 13 percent below the existing regional average, for residential and office uses and no net gain for retail land uses.” In other words, the threshold of significance for land use plans is 87 percent of the countywide average rate of VMT. Under the Regional Guidelines, the recommended methodology for conducting VMT assessments for land use plans is to compare the existing VMT per capita and/or VMT per employee for the region with the expected horizon year VMT per capita and/or VMT per employee for the land use plan of the jurisdiction.” Fresno County, in the PEIR associated with its 2024 General Plan, used the thresholds recommended by the Regional Guidelines and interpreted them as follows:

- a) Generate VMT per capita that exceeds 87 percent of the Countywide average rate of VMT per capita; or
- b) Generate VMT per employee that exceeds 87 percent of the Countywide average rate of VMT per employee.

Because all VMT associated with implementation of the proposed VCIP would be due to workforce trips, the above threshold regarding per employee VMT is used to evaluate operational VMT in this analysis. This threshold is 22.4 VMT per employee, which is already established for the Plan Area and was applied by Fresno County in the PEIR it prepared for the 2024 Fresno County General Plan (Fresno County 2023c). Using this threshold is therefore consistent with the Technical Advisory, the Regional Guidelines, and the Fresno County General Plan.

It is important to note that the Regional Guidelines provided further refinement of screening thresholds contained in OPR’s technical advisory. In a detailed analysis that correlated VMT with a common GHG threshold of 3,000 MTCO_{2e}/yr, the Regional Guidelines established a higher screening threshold of 500 daily trips as the level below which projects may be presumed to create a less-than-significant impact (Fresno COG 2021).

Regarding potential VMT related to construction, both the CEQA Guidelines and the Technical Advisory are focused on a project’s operational contribution to VMT, and do not provide specific guidance for determining construction impacts. However, CEQA Guidelines section 15064.3(b)(3) states: “For many projects, a qualitative analysis of construction traffic may be appropriate.” The Technical Advisory further provides: “Generally, qualitative analysis should only be conducted when methods do not exist for undertaking a quantitative analysis.” (OPR 2018, p. 7, footnote 12.) To date, Fresno County has not provided guidance on specific models or methods to estimate VMT or corresponding thresholds of significance for construction traffic. In other counties which have established analytical procedures for determining project VMT impacts, such as San Diego County, quantitative VMT analysis for construction traffic is not required. Therefore, the following analysis provides a qualitative discussion of construction VMT. This approach is consistent with the Regional Guidelines, which provide: “If existing models or methods are not available to estimate the vehicle miles traveled for the particular project being considered, a lead agency may analyze the project’s vehicle miles traveled qualitatively. . . . For many projects, a qualitative analysis of construction traffic may be appropriate.”

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Construction and Decommissioning

The overall construction VCIP energy and infrastructure projects would be expected to occur over a 10-year period. The construction of each typical 250 MW solar/BESS project would be completed in one year or less. During the peak years of VCIP construction (2029-2033), approximately 6,000 construction workers would commute to and from the work sites each day. It is expected that at least 25 percent of workers would voluntarily carpool which is consistent with observations at similar utility-scale solar projects in the region. Thus, the construction of VCIP projects would generate 4,500 commute round trips each day with an average round trip length of 95 miles. On this basis, it is estimated that the average daily VMT generated by all worker trips during the peak years of VCIP project construction (2029-33) would be approximately 427,500 miles per day (i.e., 4,500 round trips X 95 miles).¹

It is assumed that decommissioning VMT would be similar but would likely be substantially less given the lower intensity of activity involved due to generally less equipment use and fewer haul trips. In comparison, the average VMT for Fresno County in 2019 (the most recent year for which VMT data is available) was 16,267,198 miles per day (Fresno County 2023b, TIS Appendix). Thus, the daily VMT generated during peak construction years of the VCIP energy and infrastructure projects would be equivalent to about 2.9 percent of average daily VMT in Fresno County in 2019. Individual VCIP projects would generate substantially less construction VMT. For example, the typical 250 MW solar/BESS project would generate approximately 34,200 VMT, or 0.2 percent of the countywide total. These temporary increases in VMT would occur only during the one-year construction period for each individual VCIP project. (It is noted that a substantial portion of the estimated construction VMT would occur on roadways outside Fresno County, since some workers would be drawn from surrounding counties.) While there is not an available model to demonstrate whether this construction-related VMT would exceed the Fresno County's significance threshold, construction activities associated with the VCIP would temporarily increase VMT in the Plan Area compared to existing conditions. However, temporary construction traffic in rural areas cannot be measured against employee or per capita VMT thresholds which are designed specifically to apply to operational traffic from permanent land use projects in urban areas. It is noted that a substantial reduction in worker trips would be required to reduce VCIP construction traffic volumes to levels where County LOS standards would be met. The Traffic Study determined that worker commute trips would need to be reduced from 4,500 daily trips to 3,550 daily trips to maintain acceptable LOS on area roadways, which is the trip reduction required in MM TR-1. The total trip reduction from an unmitigated trip generation of 4,500 daily trips (including 1,500 workers who are carpooling) to a 950 trip reduction in trip generation, with mitigation, represents a reduction of 21 percent and an equivalent reduction in VMT. Therefore, it is qualitatively noted for informational purposes only, that the mitigation measures for construction traffic identified in this PEIR would result in a 21 percent reduction in daily construction worker trips compared to unmitigated construction traffic generation by the VCIP.

Construction-related VMT would end after the 10-year buildout period, and then temporarily resume during the future decommissioning period (i.e., upon completion of each project's 35-year operating life). As discussed under Impact TR-1 above, the roadways that would be affected by VCIP project construction traffic would mostly continue to operate within their design capacities (as indicated by the applicable LOS standards), although trip reduction measures (as identified in MM TR-1) would be required to maintain acceptable traffic flow during the peak periods. It is estimated that the required trip reduction measures in MM TR-1 would result in a 21 percent reduction in overall construction and decommissioning traffic VMT from potential VCIP projects. The short-term

¹ Annual VMT reflects total miles traveled by construction workers. It is anticipated that construction workers would primarily be drawn from the surrounding communities and would have an average roundtrip commute of about 95 miles (see Chapter 2. *Project Description*).

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greenhouse gas emissions from VCIP project construction and decommissioning would be relatively small when viewed against the substantial GHG emissions avoided by operations of completed VCIP facilities, which would greatly offset emissions from a fossil-fueled generating plant of equivalent capacity. This would result in a substantial net benefit in terms of GHG emissions over the long term, which is a key objective of SB 743 (see Section 4.8. *Greenhouse Gas Emissions*). Each VCIP project would be required to substantially reduce construction VMT through trip reduction measures. With the implementation of MM TR-1, the construction of each VCIP project would result in a *less than significant impact* regarding conflict with CEQA Guidelines section 15064.3, subdivision (b).

Operations

As discussed under Impact TR-1 above, traffic generated during operation of potential VCIP projects would be very light. A small number of permanent staff would be stationed at each solar and BESS facility, and contractors would occasionally visit the facilities to perform maintenance activities such as panel washing. Operational trips associated with the gen-tie lines, collection substations, and connecting transmission lines would consist of inspection, maintenance, and repair trips which would occur as needed and would generate negligible traffic. On average, it is estimated that the typical 250 MW solar/BESS facility would generate an average of 15 daily round trips (i.e., 30 trip-ends or trips) by the workers on any given day, for an average daily VMT of 1,425 miles (based on average one-way commute trips of 47.5 miles), or 5.7 miles per MW. On a VCIP plan-wide basis, it is estimated that this operational traffic would generate an average daily VMT of about 119,700 miles, based VCIP buildout of 21,000 MW.

For purposes of evaluating plan-wide VMT impacts, both the Technical Advisory and Fresno COG's Regional Guidelines state: "A general plan, area plan, or community plan may have a significant impact on transportation if proposed new residential, office or retail land uses would in aggregate exceed the respective thresholds recommended above" (Fresno COG 2021). In the case of Fresno County, the applicable threshold is exceeded if a project would exceed 13 percent below the existing regional average for residential and office uses, and no net gain for retail land uses. Since the VCIP is an infrastructure plan to guide implementation of the facilities proposed by the District, and is not a land use plan by a local land use agency, it is not clear if the Technical Advisory and Fresno COG's Regional Guidelines apply to the proposed VCIP.

At the plan-wide level, the estimated 468,095 daily VMT would exceed the County's 500 VMT screening criteria for analysis of VMT impacts for individual projects (there is no screening criteria for land use plans). As noted above, the average daily round-trip commute (i.e., VMT) by operational staff at VCIP facilities would be 95 miles, which reflects the remote locations of the VCIP facilities relative to population centers in the region where most workers would reside. This exceeds the County's VMT significance threshold of 22.4 VMT per employee. This threshold reflects a relatively low one-way work trip of 11.2 miles, which illustrates the fact that the threshold is intended to apply to urban areas which is consistent with the purpose of SB 743 to limit urban sprawl by shortening urban work trips through infill development. This threshold is not intended to apply to rural contexts which by definition consist of large areas where trips to work are unavoidably much longer than urban work trips, and because these trips bear no relation to urban sprawl. This is recognized in the Technical Advisory, which states: "In rural areas of non-MPO counties (i.e., areas not near established or incorporated cities or towns), fewer options may be available for reducing VMT, and significance thresholds may be best determined on a case-by-case basis" (OPR 2018). Considering that VCIP projects would be required to reduce their construction and decommissioning traffic generation by 21 percent under MM TR-1, and given that the VCIP renewable energy generation would substantially contribute to the state's greenhouse gas reduction goals, VCIP implementation would thus significantly advance the underlying purpose of SB 743. Therefore, with the implementation of MM TR-1 in

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conjunction with each VCIP project, the plan-wide implementation of the VCIP would result in a *less than significant impact* regarding conflict with CEQA Guidelines section 15064.3, subdivision (b).

On an individual project basis, the 30 trips (one-way) generated by each potential project would be substantially below the screening threshold of 110 trips (one way) per day for individual projects recommended by both the Technical Advisory and Fresno County General Plan Policy TR-A.25, and far below the 500 trip screening threshold set forth in the Regional Guidelines. As such, at the project level, this volume of daily trips (i.e., 30 trips) is “presumed to have a less-than-significant transportation impact” and therefore will not require an evaluation of “VMT impact on an individual basis” (Fresno County 2024b). The low VMT generated by these employees during VCIP project operations would have a negligible effect on transportation. Therefore, the operation of the individual VCIP solar/BESS facilities would not conflict with or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b). In addition, given the widely dispersed nature of the VCIP solar/BESS facilities throughout the Plan Area, the overall effect of operational traffic on service levels at full VCIP buildout would also be negligible, as discussed under Impact TR-1.

In summary, the generation of construction VMT during VCIP buildout and decommissioning would end after a period of years and would not represent a permanent increase in VMT. In any event, the traffic mitigations identified in MM TR-1 would result in a 21 percent reduction in construction VMT. Traffic generated by operation of VCIP facilities would be very light and daily trip generation would be well below the applicable screening threshold for individual projects set forth in Fresno County General Plan policy and state guidance. At the plan-wide level, VCIP implementation would substantially contribute to the state’s greenhouse gas reduction goals, and would thus significantly advance the underlying purpose of SB 743. In summary, with the implementation of MM TR-1, during construction and decommissioning of each potential VCIP project, the impact of the VCIP implementation regarding potential conflict with CEQA Guidelines section 15064.3, subdivision (b) would be *less than significant with mitigation*.

Mitigation Measures: Implement MM TR-1.

Impact TR-3. Substantially Increase Transportation Hazards

Implementation of the VCIP Energy Resource and Infrastructure Plans would potentially result in traffic hazards during project construction and decommissioning; however, traffic hazards would be reduced to less-than-significant through specified traffic safety measures to be applied at the project level. (*Less-than-Significant Impact with Mitigation*)

The VCIP energy and infrastructure projects would include driveway entrances on the adjacent state highways and County roads. The new entrances would result in turning movements in and out of the project sites which would increase the potential for interaction with traffic along these highways and roads. However, the potential project entrances would be designed in accordance with the *Fresno County Improvement Standards*, and would be subject to prior design review and approval by the Fresno County Public Works Department (Fresno Co. 1966). Project egress would be controlled by stop signs. Sightlines would generally be very good in all directions given the flat terrain, absence of visual obstructions, and linear alignment of most of the affected highways and roads. Access

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to the gen-tie lines and internal transmission lines would be provided by the paved roadways and extensive system of farm roads throughout the Plan Area.

The volume of traffic generated by the potential VCIP 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 concern due to abrupt changes in the speed of traffic flow, or due to slow turning movements across on-coming lanes of traffic. Delivery truck traffic could also interact with the slow-moving farm equipment and vehicles utilizing the roadway. This is a potentially significant traffic safety impact.

The construction of gen-tie lines and connecting transmission lines would also involve instances where transmission lines would cross over public roadways. These activities would generally occur at night to allow temporary road closures during the stringing of conductors across the roadways. These operations would be subject to detailed safety plans including temporary H-frames and netting for protection from falling conductors, and would require permits from Caltrans and/or Fresno County as applicable.

During operation of VCIP facilities, traffic generation would be very light. Considering also that ambient traffic volumes on Plan Area roads are generally very low, the potential for traffic hazards during VCIP facility operation would be low. Thus, potential traffic safety impacts during VCIP facility operations would be less than significant.

An additional safety issue is potential deterioration of surface pavement on area roadways due to heavy-duty trucks providing deliveries of construction equipment and materials to the VCIP project sites. Depending on the volume of delivery truck traffic on a given roadway segment, roadway deterioration can result in shortening the period of acceptable pavement condition relative to its design life, thus requiring greater and more frequent repair and maintenance measures than planned and budgeted for. Fresno County requires projects to mitigate pavement damage from temporary construction truck delivery volumes that would result in greater wear and tear than would be expected from normal traffic volumes (Fresno Co. 2012). However, the extent of wear and tear on access roads, and which roads would be subject to pavement damage from a specific project can only be evaluated at the time of detailed engineering project design when the types of trucks and delivery volumes, and the truck routes to be followed, are determined. The County would require that a Traffic Index (TI) analysis be conducted for each individual VCIP project, based on Caltrans' methodology, which is a measure of the deteriorating effects of truck traffic on asphalt concrete pavement (Caltrans 2025a). The analysis compares pre-project road conditions with predicted post-construction conditions to determine the degree of pavement damage, if any, would occur on affected roadway segments. The results of the TI analysis are used to determine the specific pavement repairs to be made by the project proponent, or to determine a fair share portion of the cost of mitigation attributable to the project.

In summary, the traffic hazards resulting from VCIP project construction and decommissioning would potentially be significant, while the traffic hazard from VCIP facility operations would be less than significant. Implementation of the Mitigation Measures TR-2 and TR-3 below would reduce any potential impacts related to safety hazards due to construction and decommissioning traffic associated with the VCIP projects to *less than significant*.

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Mitigation Measure TR-2: Traffic Safety Measures for VCIP Project Construction and Decommissioning

To reduce potential construction traffic safety impacts during the construction and decommissioning phases of VCIP implementation, the following traffic safety measures are identified for application at the project stage, with applicability depending on the individual circumstances of each project, as follows:

- 1) Prior to the issuance of construction or building permits and the issuance decommissioning authorizations, the project proponent shall submit a Traffic Safety Plan to the approving agency and Caltrans District 6 for review and approval. The Traffic Safety Plan shall be prepared in accordance with both the Caltrans Manual on Uniform Traffic Control Devices and Caltrans Construction Manual and must include, but not be limited to, the following elements:
 - a. Prepare Temporary Traffic Control (TTC) plan that addresses traffic safety and control through the work zone, including during temporary lane closures (if needed) to accommodate materials delivery, transmission line stringing activities, or any other utility connections;
 - b. Identify the timing of deliveries of heavy equipment and building materials;
 - c. Designate construction staff to be assigned as flaggers to direct traffic into and/or through temporary traffic control zones, as needed;
 - d. Place temporary signage, lighting, and traffic control devices, including, but not limited to, appropriate signage along access routes to indicate the presence of heavy vehicles and construction traffic;
 - e. Ensure access for emergency vehicles to the project site;
 - f. Maintain access to adjacent properties;
 - g. Identify approved truck routes for the transport of all construction equipment and materials, and avoid truck travel through residential areas (e.g., Cantua Creek), to the extent feasible;
 - h. Obtain all necessary encroachment permits from Fresno County and Caltrans for the work within the road rights-of-way;
 - i. Obtain permits from Fresno County and Caltrans for oversized/overweight vehicles which may require California Highway Patrol or a pilot car escort.

Due to the proposed VCIP's conceptual nature, the precise details and timing of construction and decommissioning activities that may require the traffic safety measures set forth in Mitigation Measure TR-2 cannot be predicted. The details of the traffic safety mitigations would be determined by the County Public Works Department when any activities that require mitigation are scheduled and the applicant's construction contractor requests consultation regarding such activities.

Significance after Mitigation: Less than Significant Impact.

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Mitigation Measure TR-3: Road Condition Survey and Repair Requirements.

To address any pavement damage resulting from heavy truck traffic during construction and decommissioning of potential VCIP projects, the following mitigation measures are identified for application at the project stage, with applicability depending on the individual circumstances of each project, as follows:

- 1) **Road Condition Survey.** Prior to the issuance of permits and authorizations for project construction and decommissioning, respectively, a preconstruction report and a pre-decommissioning report shall be prepared by a qualified registered engineer, retained by the project proponent, to include a detailed analysis of road suitability to accommodate haul trucks during project construction and decommissioning. The reports shall be submitted to the Fresno County Department of Public Works and Planning. Prior to initiating the preconstruction or pre-decommissioning report, the proposed methodology shall be presented to the Fresno County Department of Public Works and Planning for review and approval. Based on the findings of the reports, the project may be required to make improvements to existing roads prior to construction and/or decommissioning.
- 2) **Road Repair Agreement.** Prior to the issuance of permits and authorizations for project construction and decommissioning, the project proponent shall enter into a secured agreement with Fresno County to ensure that the project contributes its fair-share portion toward repairs of County roads and/or State highways that are demonstrably damaged by the project. The extent of roadway impacts shall be determined in consultation with Fresno County and/or Caltrans District 6, as applicable. Subject to the discretion of the County of Fresno and Caltrans District 6, roadway impacts shall be mitigated either by construction of an overlay, reconstruction of the pavement section, or by participating financially for the costs of the mitigation to the extent of the project's fair share.

Significance after Mitigation: Less than Significant Impact.

Impact TR-4. Result in Inadequate Emergency Access

Implementation of the VCIP Energy Resource and Infrastructure Plans would not result in inadequate emergency access. (*Less-than-Significant Impact*)

As shown in Figure 4.16-1, the Plan Area is served by a comprehensive regional roadway network that includes several state highways and multiple county roads. These roadways are generally lightly traveled and in good physical condition, and thus provide efficient routes for emergency transport and evacuation. This roadway network would facilitate accessibility to VCIP energy and infrastructure facilities in the event of an emergency. These routes would remain open throughout construction, and emergency access would not be limited or impeded by construction traffic. Travel speeds on some area roadways may be reduced during peak worker commute periods and by slow moving delivery trucks. However, any reduced travel speeds would not significantly affect emergency access or related services (see Section 4.15. *Public Services*). Deliveries would be spaced out during each day and would not block passage by emergency vehicles. In addition, traffic safety plans required under MM TR-2 would ensure that construction traffic is managed to minimize obstructions, congestion, and safety hazards on public roadways.

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To provide adequate emergency access within VCIP facilities, each solar/BESS facility would include system of internal driveways designed and constructed to accommodate emergency vehicles and equipment. All project plans would be reviewed by the appropriate County departments for conformance with all applicable fire-safety code and ordinance requirements for emergency access. Therefore, implementation of the VCIP Energy Resource and Infrastructure Plans would result in *a less-than-significant impact* with respect to adequacy of emergency access.

Mitigation Measures: No mitigation is required.

4.15.3.2. TRANSMISSION CORRIDORS OUTSIDE THE VCIP

The transmission corridors for delivery of solar generation from potential VCIP projects to urban electricity markets in northern and southern California have been identified at a conceptual level in this PEIR to allow a general discussion of environmental impacts associated with transmission line development for informational purposes. These transmission delivery corridors extend far beyond the District's boundaries and are not part of the proposed VCIP. Planning and approval of these outside transmission lines are under the jurisdiction of the state and federal energy regulatory agencies, and public utilities. The following discussion provides an overview of potential impacts of the outside transmission lines with respect to transportation.

Construction of the outside transmission lines would generally involve the following steps: clearing of right-of-way and staging areas; installation of tower footings and structures; and conductor stringing. The construction activities would proceed in a stepwise fashion from one end of each corridor to the other, and as such the duration of construction at any given location would be relatively brief. The construction of transmission lines would involve about 50 construction workers and 50 pieces of construction equipment. The work would be organized in several crews who would perform specialized tasks (site clearing, tower construction, conductor stringing) at successive tower sites as the work proceeds along the corridor. The transmission corridors would be located in rural areas and each work site would be accessed primarily by rural roads. The construction workers would commute from their homes in the region or from temporary lodging near the worksites. The workers would generate about 100 trips per day, with the temporary travel routes varying almost daily. The construction equipment would be moved short distances every few days as the work progressed.

Given the low volumes and dispersed nature of the worker trip generation, and the low ambient traffic volumes on the affected rural roads, the potential that roadway and intersection LOS in any of the affected counties would temporarily fall below acceptable levels due to the construction of the outside transmission lines is negligible.

During transmission line construction, there is potential for traffic hazards at the locations where transmission lines would cross over public roads or highways, or due to potential conflicts with slow moving construction vehicles. To minimize safety hazards during transmission line construction, it is anticipated that the approving agencies would require the preparation and implementation of traffic safety plans, like that identified in MM TR-2, which is a standard requirement for transmission line construction.

Transmission line construction would require road closures at locations where conductors would span public roadways. However, these closures would occur at night and would be completed relatively quickly. Given the

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rural and remote areas traversed by the outside transmission corridors, and the fact that roadway closures would not be needed, the impact to emergency vehicle access would be negligible.

During the operation of the outside transmission lines, minimal traffic would be generated by occasional visits by utility workers in the performance of inspection and maintenance tasks.

In summary, the construction and operation of the outside transmission lines would generate very low volumes of traffic and would not result in LOS dropping below acceptable levels. Potential traffic hazards posed by construction would be minimized through implementation of traffic safety plans, as required. Emergency vehicles would not be impeded by transmission construction or operation, and evacuation routes would not be affected. Therefore, the construction and operation of outside transmission lines is unlikely to result in adverse transportation impacts.

4.15.3.3. CUMULATIVE IMPACTS

As discussed under Impact TR-1, implementation of the VCIP Energy Resource and Infrastructure Plans would not conflict with a program, plan, ordinance or policy addressing the circulation system. Regarding applicable level of service policies, the construction of VCIP projects would result in generation of high traffic volumes by commuting workers, but LOS on affected roadways and intersections would be maintained at acceptable levels through trip reduction measures required under MM TR-1. Within the Plan Area and vicinity, there are 12 approved and pending projects that may generate construction and operational traffic affecting the same roadways as the VCIP projects. Nine of these are solar and/or BESS projects, two are pistachio plants, and one is a regional substation (Manning). It is anticipated that all these projects would be constructed before 2029 when the first substantial VCIP energy and infrastructure projects would be planned to begin construction. By that time, these completed projects are expected to generate relatively low volumes of operational traffic which would be dispersed over a wide area. These operational trips from the other cumulative projects would result in a negligible increase in traffic volumes on roadways utilized by VCIP project construction traffic, and would not result in a cumulative degradation of LOS below acceptable levels on any affected roadways or intersection (assuming implementation of trip reduction measures identified in MM TR-1). Since there would not be a substantial contribution to cumulative traffic from other projects, the *cumulative impact to LOS targets would be less than significant*, and the *project contribution would not be considerable*.

Regarding Vehicle Miles Traveled, the traffic generated by VCIP construction projects would be temporary and would be substantially reduced by MM TR-1, which would require a 21 percent reduction in trip generation to maintain acceptable LOS on affected roadways and intersections, which would result in an equivalent reduction in VMT. In the absence of established thresholds for solar projects, particularly those located in remote rural areas, this represents a substantial reduction in VMT from baseline levels. The operational traffic generated by individual VCIP solar/BESS projects would be very low and would be under applicable screening thresholds for potential VMT impacts at the project level. At the plan-wide level, the remoteness of VCIP solar/BESS projects relative to population centers results in 95 daily VMT for operational staffs which exceeds the county's VMT significance threshold of 22.4 VMT per employee, although this threshold is intended to apply to urban areas and not far-flung rural development. Additionally, the renewable energy projects under the proposed VCIP would substantially advance the underlying intent of SB 743 in reducing greenhouse gas emissions. The approved and pending projects in the VCIP Plan Area consist predominantly of solar/BESS projects in Fresno and Kings counties (i.e., 98% of all cumulative projects by acreage). Most of these cumulative projects have already been completed, and the {00080666.1}

remaining projects would likely be completed prior to construction of any VCIP projects. The construction traffic generated by these projects would also be temporary, and the operational traffic from these projects would be negligible.

The remaining cumulative projects consist of pistachio plants, small commercial projects, a regional substation in unincorporated Fresno County, and three residential subdivisions and two industrial facilities in the City of Lemoore. These projects would be subject to Fresno County's requirement to reduce VMT by 13 percent below the countywide average, and the City of Lemoore's requirement to reduce VMT by 13 percent below the regional average, which would be implemented in both jurisdictions through VMT mitigation programs, to the extent they are established by the time these projects are approved. Thus, all cumulative projects would either fall below screening thresholds for VMT or would be subject to VMT mitigation requirements, as applicable. Therefore, the cumulative VMT impact would be *less than significant* and the project *contribution would not be considerable*.

With respect to traffic safety hazards, there is a potential for creation of hazardous driving conditions during the construction periods for the cumulative projects, including the VCIP projects. Large slow-moving trucks could result in temporary congestion near the project entrances, and could pose a safety concern due to abrupt changes in the speed of traffic flow, or due to slow turning movements across on-coming lanes of traffic. However, as discussed previously, the other large solar projects planned in the vicinity of VCIP projects (i.e., Luna Valley, Sonrisa, Heartland) are all anticipated to be completed before the construction of VCIP solar/BESS projects in their vicinity is planned to commence in 2029, and there are no other substantial foreseeable projects that would be constructed in the area during the VCIP buildout period. Additionally, to minimize potential traffic safety hazards, all the cumulative projects, including the potential VCIP projects, would implement traffic control measures similar to those identified in MM TR-2 above. These measures would reduce the potential traffic safety impacts at each cumulative project site to less than significant. Further, the entrances for each cumulative project would be far apart, so that even in the unlikely event that their construction schedules overlap, the areas subject to traffic safety measures would not overlap. Therefore, potential traffic safety hazards resulting from collective truck traffic at the cumulative projects would be *less than cumulatively significant*, and the project *contribution would not be considerable*.

4.15.4. References – Transportation

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4.17. UTILITIES AND SERVICE SYSTEMS

This section includes the following discussion and analysis related to utilities and service systems: existing environmental setting and regulatory context; methodology and criteria for evaluating impacts; and the results of the impact assessment, including identification of potentially significant impacts and corresponding mitigation measures to avoid or substantially lessen such impacts to the extent feasible. The Water Supply Assessment (WSA) prepared for the proposed VCIP is contained in Appendix F of this PEIR.

PEIR Scoping Comments

During the PEIR Scoping process, the District received two letters containing comments regarding utilities and service systems (see PEIR Scoping Report in Appendix A of this document). These comments are summarized below.

Pacific Coast Federation of Fishermen's Associations & Planning and Conservation League (PCL), et al.

The comment letter suggests that the proposed conversion of 130,000 acres of agricultural lands to municipal and industrial development covered by the VCIP will reduce the water needs per acre and should reduce the federal water allocation associated with these lands, and cumulatively reduce full contract quantities delivered to Westlands.

[Potential water supply impacts of VCIP implementation in relation to the existing physical environment are addressed in Section 4.17.3. *Environmental Impact Analysis*, under Impact UTS-2, and Section 4.10. *Hydrology and Water Quality*, under Impact HYD-2. Potential impacts of VCIP implementation on the existing physical environment related to agricultural resources are addressed in Section 4.2. *Agriculture and Forestry Resources*. Matters pertaining to federal Central Valley Project (CVP) water contracts and allocations unrelated to physical impacts of VCIP implementation are outside the scope of this PEIR.]

Leadership Counsel for Justice & Accountability

The comment letter requests that the PEIR provide: “accurate information about the amount of water that will be used, where these resources will come from, and how much groundwater will remain in the aquifer as a result of the actual transition of actively irrigated land to solar. The comment letter also requests that the EIR include a holistic analysis of all water resources to be used for implementation of the VCIP, including but not limited to water used during construction, water needed for the projects, and water used for cooling of solar panels.”

The comment letter requests that the District ensure any groundwater that will be utilized for implementation of the projects in the VCIP do not put the community water systems of Cantua Creek or El Porvenir at risk of being dewatered.

The comment letter requests that the PEIR analyze all potential impacts associated with implementation of the VCIP on small water systems, community water systems, and domestic wells, including but not limited to, obstructing access to groundwater, degrading groundwater quality as a result of groundwater depletion associated with VCIP implementation, and groundwater source pollution. The commenter also requests that adequate mitigation measures be included in the PEIR and not be delegated to other processes, including but not limited to local GSA mitigation programs, SAFER projects implementation, nutrient management plans, etc. {00079369.1}

[Potential water supply impacts are addressed in Section 4.17.3. *Environmental Impact Analysis*, under Impact UTS-2, and Section 4.10. *Hydrology and Water Quality*, under Impact HYD-2.]

4.17.1. Environmental Setting

Water Supply

The VCIP Plan Area lies entirely within the Fresno County portion of the District's service area. Under existing conditions, water supply for agricultural irrigation is obtained from pumped groundwater and from surface water deliveries conveyed through the District's water distribution system. Pursuant to its agricultural water service contract with the U.S. Bureau of Reclamation (USBR), the District transports untreated (i.e., raw, non-potable) water for municipal and industrial purposes to the Cities of Huron and Coalinga, the unincorporated communities of Cantua Creek, Three Rocks/El Porvenir, Five Points, and Westside/O'Neill, as well as Naval Air Station (NAS) Lemoore and various agricultural processing facilities. The untreated water is treated to drinking water standards by these entities at community or private treatment plants and distributed by their water supply lines.

For agricultural users, the primary source of irrigation water in the District is surface water from the CVP which is delivered to the District by USBR via the San Luis Canal / California Aqueduct. Under its current contract with the USBR, the District is entitled to receive 1.195 million acre-feet (AF) of surface water delivery during years when 100 percent of this CVP water is allocated. The District conveys its allocated CVP contract water to authorized end-users pursuant to its rules and regulations through a series of lateral pipes extending from the San Luis Canal to metered valves located throughout the District.

In recent years, actual deliveries of CVP contract water to the District have been dramatically curtailed. Also, passage of the Central Valley Project Improvement Act and adoption of other regulations which dedicate more water to fish and wildlife, place the District at a very low priority for water allocation during times of shortage. During the 10 years between 2015 and 2024, the District received an average of 36 percent of its CVP contract water. In 2014, 2015, 2021 and 2022, the District received "zero" allocations of CVP contract water, and in 2016 received 5 percent of its CVP contract water (WWD 2025a). To meet the irrigation requirements of planted crops under such conditions, private landowners on non-District-owned lands augment reduced CVP water supplies with pumped groundwater or by acquiring supplemental water. Since the groundwater is relatively high in salinity, the amount of groundwater that can be blended with the higher quality surface water is limited by the generally low salinity tolerance of crops. Due to the unavailability of surface water deliveries during the years noted above, combined with the quality and quantity constraints on groundwater pumping, an average of approximately 189,640 acres were idled or fallowed annually within the District between 2015 and 2024 (see Section 4.2. *Agriculture and Forestry*) (WWD 2025a).

In January 2020, the District's Board of Directors adopted the Groundwater Sustainability Plan (GSP) for the 622,215-acre Westside Subbasin (Subbasin), which includes the District's entire service area of 614,700 acres. In December 2024, the District's Board of Directors adopted the 2025 Amendment to the GSP (DWR 2025). The GSP process determined that the long-term sustainable yield across the Subbasin is 305,000 AF per year

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(WWD 2024b). Under the GSP, approximately 525,000 acres within the Subbasin¹ are eligible to receive a Groundwater Allocation, subject to limits on the volume of groundwater that can be pumped in a given year without negative impacts identified in the GSP. The groundwater allocation program includes a “transition period” from 2022 to 2030, in which a uniform annual allocation was initially established at 1.3 AF/acre and then, starting in 2024, is subsequently reduced each year by 0.1 AF/acre until 2030 when the allocation would reach 0.6 AF/acre (WWD 2021a, 2024a, DWR 2025a). For purposes of this PEIR, the available groundwater supply for the Plan Area is assumed to be 0.6 AF per acre per year, as construction would be projected to start in 2028, with full buildout in 2038. (See Appendix F of this PEIR and Section 4.10. *Hydrology and Water Quality*, item ‘e’, for a full discussion of the District’s GSP, including its 2025 GSP Amendment.)

Wastewater Collection and Treatment

There are two community wastewater collection and treatment systems within the VCIP Plan Area. These are in the communities of El Porvenir/Three Rocks and Cantua Creek where wastewater services are provided by County Service Area No. 30 and 32, respectively, and are operated by the Fresno County Department of Public Works. The wastewater systems include community sewer systems, package treatment plants, and disposal lagoons (Fresno County 2023b). The Harris Ranch Resort and other commercial centers on Interstate 5 (I-5) also have larger wastewater systems. The communities of O’Neill Ranch/Westside and Five Points are served by individual septic systems, as are the individual rural dwellings, ranches, and agricultural processing facilities in the Plan Area. The adjacent and nearby communities with large wastewater collection and treatment systems include the cities of Mendota, Coalinga, and Huron, and NAS Lemoore.

For solar projects in rural areas of Fresno County that include permanent on-site employees, the wastewater disposal needs are typically met by individual septic systems installed adjacent to Operations and Maintenance (O&M) buildings, and are designed, constructed, and operated in accordance with the Fresno County Plumbing Code and the design criteria of the Fresno County Local Area Management Program (LAMP) as approved by the State Water Resources Control Board (SWRCB) (Fresno County 2019a).

Storm Water Drainage

There are no structural storm drainage facilities within the Plan Area. The terrain of the Plan Area is virtually flat, with an average gradient of 0.4 percent. During normal rain events, stormwater on open land typically percolates into the soil, and runoff from paved roads drains to adjacent agricultural lands or earthen swales. During more intense or prolonged storm events, the ground becomes saturated and relatively small volumes of stormwater temporarily pond on the surface and gradually percolate into the ground, and some areas drain to adjacent canals and drainage ditches. Some of the existing large solar facilities in the Plan Area include stormwater basins to capture on-site runoff.

Electric Power

Pacific Gas and Electric Company (PG&E) is an investor-owned utility company that provides electrical service throughout Plan Area, including to power the agricultural groundwater wells, from its existing system of 12-kV distribution lines. Several PG&E high voltage transmission lines pass through the Plan Area, including two 230-kV lines and a 500-kV line running parallel to I-5, as well as several other 230-kV lines and medium-voltage

¹ All groundwater users receive a pro rata allocation of the Subbasin’s sustainable yield based on the user’s gross acreage within the Subbasin pursuant to Water Code section 10726.4(a)(2).
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lines running through the interior of the Plan Area. PG&E operates two major regional substations in the Plan Area, including the Gates Substation on W. Jayne Avenue and the Panoche Substation on N. Panoche Road, as well as several smaller substations dispersed throughout the Plan Area.

Natural Gas and Crude Oil

The Plan Area is entirely within the service area of PG&E, which operates the following pipelines in the Plan Area: 1) A 33-42-inch diameter trunk pipeline running parallel to I-5 on the east, including two compressor stations; 2) several 12-26-inch diameter pipelines branching off the main pipeline to the east and northeast to Fresno and Mendota areas; 3) several 13-18-inch diameter pipelines branching off the main pipeline to serve the cities of Coalinga, Huron, Mendota and others in the Plan Area vicinity (PG&E 2025). A non-PG&E natural gas transmission pipeline, owned by the Energy Operations Management Corporation, branches off the main PG&E pipeline near W. Nebraska Avenue and heads north through the north-central portion of the Plan Area. A major crude oil pipeline runs through the western margin of the Plan Area along the base of the Diablo Range (US DOT 2024).

Telecommunications

The Project area is located within AT&T's service territory for land-based telephone service, and includes internet and TV connections. Comcast Xfinity provides cable, internet and phone service in the urbanized areas of Fresno County. Wireless telephone service is available from Verizon Wireless, AT&T, Sprint, and T-Mobile. Wireless internet is available from Unwired Broadband.

Solid Waste

Solid waste collection and disposal service in Fresno County is the responsibility of the Fresno County Resources Division. The County operates one active solid waste facility at the American Avenue Disposal Site, located on W. American Avenue approximately 6 miles east of Tranquillity. This facility is a Class III landfill that accepts all types of solid waste and recycling, including household hazardous waste, and construction and demolition material (CalRecycle 2024c). The American Avenue Landfill has a maximum permitted disposal rate of 2,200 tons per day, and as of January 2022 had a remaining capacity of approximately 17,970,000 cubic yards. It is estimated that the landfill will reach capacity in 2043 (Fresno County 2023b).

Commercial solid waste is collected by private contract with licensed haulers. Mid Valley Disposal (MVD) provides solid waste and recycling services in Fresno County. MVD operates a Materials Recovery Facility (MRF) & Transfer Station in Kerman, which accepts construction debris.

4.17.2. Regulatory Context

The following is an overview of the principal statutes, regulations, plans and programs related to utilities and service systems that may apply to the VCIP.

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Federal

There are no federal laws, orders, regulations, or standards related to utilities and service systems that are applicable to the VCIP.

State

Senate Bills (SB) 610 (Water Supply Assessments)

Enacted in 2001, SB 610, codified as Water Code section 10910 et seq., requires detailed analysis of water supply availability for certain types of plans and projects as part of the CEQA review process. As more particularly described in Appendix F, the primary purpose of a WSA is to determine if there is sufficient water supply to meet the projected demands of a project under normal, single dry, and multiple dry water years during a 20-year projection. WSAs address the reasonably foreseeable impacts of supplying water to a project, particularly those on an existing public water system. Under SB 610, a “public water system” is a system that provides potable piped water to the public for human consumption and has 3,000 or more service connections (Wat. Code, §§ 10912(c), 10910(b).) As part of this analysis, SB 610 asks whether there is a current Urban Water Management Plan (UWMP) that accounts for a project’s demand. A “urban water supplier” is a publicly or privately owned supplier that provides potable water for municipal purposes to more than 3,000 customers or supplies more than 3,000 AF annually. (Wat. Code, § 10617.)

The Plan Area is located within the boundaries of the District, which provides irrigation water to users within its jurisdiction. The District also delivers non-potable, untreated surface water to municipal and industrial (M&I) users. The M&I purposes include but are not limited to single family dwellings, farm housing, commercial operations, industrial operations, military, and state institutions. As such, the District is not a “public water system” under SB 610 because it does not provide piped water to the public for human consumption. (Wat. Code, § 10912(c).) There is no UWMP that accounts for the project’s water demands. Because the District does not provide potable municipal water to more than 3,000 customers or supply more than 3,000 AFY of treated piped water, it is not an urban water supplier and is not required to prepare an UWMP. (Wat. Code, §§ 10617, 10620.)

Under SB 610, cities and counties must incorporate a WSA² into any CEQA document for the following projects:

1. A proposed residential development of more than 500 dwelling units.
2. A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space.
3. A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space.
4. A proposed hotel or motel, or both, having more than 500 rooms.
5. A proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area.
6. A mixed-use project that includes one or more of the projects specified in this subdivision.

² While the District is not a city or county, it prepared a WSA for the VCIP for informational purposes.
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7. A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project.

(Wat. Code, § 10912; see Cal. Code Regs., tit. 14 (CEQA Guidelines), § 15155.)

As provided in Appendix F, the average water demand by a 500 dwelling unit project in the vicinity of the proposed VCIP is 168 acre-feet per year (AFY). The VCIP's maximum water demand would be 2,227 AFY, which would be required during four years of peak construction and decline through the remainder of the construction period. The VCIP's maximum annual operational demand would be 514 AF, which would occur after all construction is completed around year 2039. As these demands would exceed the amount of water required by a 500 dwelling unit project, the VCIP meets the definition of a "project" for which a WSA is required. As such, a WSA was prepared as Appendix F of this PEIR, and its findings and conclusions are summarized under Impact UTS-2, later in this section.

Sustainable Groundwater Management Act

In September 2014, Governor Brown signed the Sustainable Groundwater Management Act (SGMA). The goal of the legislation is to, among other things, provide for the "sustainable management" of California's groundwater basins (i.e., the management and use of groundwater in a manner that can be maintained during SGMA's planning and implementation horizon without causing specified "undesirable results") and to "enhance local management of groundwater" (Wat. Code, §§ 10720.1, 10721(v)). SGMA requires a designated groundwater sustainability agency (GSA) to prepare a GSP for each high- or medium-priority basin (or subbasin), with adoption deadlines of 2020 or 2022 depending on the basin's priority. Critically overdrafted basins and subbasins are required to prepare and be managed under a GSP by January 31, 2020. (Wat. Code, § 10720.7(a)(1).)

As the primary water purveyor in the Westside Subbasin (Subbasin), the District is the designated GSA for the Subbasin. Fresno County serves as the GSA for the portions of the Subbasin that are within the County's jurisdictional boundaries, including the areas within the City of Huron's jurisdictional boundaries, but outside the boundaries of the District. The California Department of Water Resources (DWR) has designated the Subbasin as a critically overdrafted basin. The District, in cooperation with the County, prepared the "Westside Subbasin Groundwater Sustainability Plan" (the GSP), which the County and the District adopted on January 7 and January 8, 2020, respectively. The District adopted revisions to the Westside GSP on June 21, 2022. DWR approved the Westside GSP, as revised, on August 4, 2023. Pursuant to SGMA, the District prepares Annual Groundwater Status Reports that it provides to DWR and all groundwater pumpers. On December 17, 2024, the District approved its 2025 update to its GSP (2025 GSP Amendment), which was submitted to DWR on January 23, 2025 (DWR 2025a).

The purpose of the GSP is to characterize groundwater conditions in the Subbasin, evaluate and report on conditions of overdraft, establish sustainability goals and sustainability management criteria, and describe projects and management actions the GSA intends to implement to achieve sustainability by 2040 and thereafter within the GSP's planning and implementation horizon (i.e., to 2070).

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California Water Code

Water Code section 13751 requires a “Report of Well Completion” to be filed with DWR within 60 days of well completion. New wells must comply with DWR’s well standards as described in Water Resources Bulletins 74-81 and 74-90.

California Integrated Waste Management Act

Under the California Integrated Waste Management Act, local jurisdictions must submit solid waste plans to California’s Department of Resources Recycling and Recovery (CalRecycle), and must demonstrate, over a five-year reporting cycle, that at least 15 years of landfill capacity remains available in the jurisdiction. The Act also set in place a comprehensive statewide system of permitting, inspections, and maintenance for solid waste facilities, and authorized local jurisdictions to impose fees based on the types and amounts of waste generated.

California Green Building Standards Code

The California Green Building Standards Code (CALGreen), part 11, title 24 of the California Code of Regulations (CCR), sets forth requirements for disposal and recycling of hazardous and universal wastes. Specific standards and requirements are included for the identification, collection, transport, disposal, and recycling of hazardous wastes. These include universal wastes, such as batteries, electronic devices, mercury-containing equipment, lamps, cathode ray tubes, and aerosol cans. Requirements are detailed for recycling, recovery, returning spent items to the manufacturer, or disposal at an appropriately permitted facility.

Photovoltaic Modules – Universal Waste Management Regulations

In 2015, SB 489 was enacted to add section 25259 to Health and Safety Code, Division 20, Chapter 6.5, Article 17, which authorizes the DTSC to adopt regulations to designate end-of-life photovoltaic modules that are identified as hazardous waste as a universal waste and subject those modules to universal waste management. In late 2020, the California Office of Administrative Law (OAL) approved regulations, effective January 1, 2021, for managing PV modules as universal waste. The adopted regulations include specific requirements for handling, transport, treatment, and disposal of discarded PV modules (CCR, tit. 22, §§ 66260.10 et seq.). This allows PV modules to be accepted by universal waste handlers for recycling and treatment (DTSC 2025a).

Utility Notification Requirements

Government Code section 4216 et seq. requires owners and operators of underground utilities to become members of, participate in, and share the costs of a regional notification center for excavation projects. Underground Service Alert North (USA North) covers northern and central California and is the notification center for Fresno County. Its purpose is to provide an effective damage prevention service that protects essential underground services and utilities. It receives planned excavation reports and transmits the information from these reports to all participating members with underground facilities at the location of excavation. The USA North members mark or stake their facilities, provide information, or give clearance to dig following the notifications (USA North 2020).

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Westlands Water District

The District provides water services to landowners and water users in western Fresno and Kings Counties. These water services include the sustainable management and delivery of water supply, as well as the provision of ongoing education, advanced technology and innovative conservation methods.

A key component of the District's Water Management Plan is water conservation (WWD 2019a). 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

The District serves as the GSA for the Subbasin pursuant to SGMA. It is the District's responsibility under SGMA to: prepare a GSP which characterizes groundwater conditions in the Subbasin, evaluate and report on conditions of overdraft, establish sustainability goals and sustainability management criteria, and describe projects and management actions the GSA intends to implement to achieve sustainability by 2040.

Fresno County

Fresno County General Plan

The Fresno County General Plan (Fresno County 2024b) contains the following goals and policies related to utilities and service systems that may be relevant to implementation of the VCIP:

Public Facilities and Services Element

A. General Public Facilities and Services

Goal PF-A To ensure the timely development of public facilities and to maintain an adequate level of service to meet the needs of existing and future development.

Policy PF-A.2 **Facilities and Services**
The County shall ensure through the development review process that public facilities and services will be developed, operational, and available to serve new development. The County shall not approve new development where existing facilities are inadequate unless the applicant can demonstrate that all necessary public facilities will be installed or adequately financed and maintained (through fees or other means).

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C. Water Supply and Delivery

GOAL PF-C To ensure the availability of an adequate and safe water supply for domestic and agricultural consumption.

Policy PF-C.12 Limited Ground Water

In those areas identified as having severe groundwater level declines or limited groundwater availability, the County shall limit development to uses that do not have high water usage or that can be served by a surface water supply.

Policy PF-C.16 Water Supply Evaluation

The County shall, prior to consideration of any discretionary project related to land use, require a water supply evaluation be conducted. The evaluation shall include the following:

- a. A determination that the water supply is adequate to meet the highest demand that could be permitted on the lands in question. If surface water is proposed, it must come from a reliable source and the supply must be made “firm” by water banking or other suitable arrangement. If groundwater is proposed, a hydrogeologic investigation may be required to confirm the availability of water in amounts necessary to meet project demand. If the lands in question lie in an area of limited groundwater, a hydrogeologic investigation shall be required.
- b. If use of groundwater is proposed, a hydrogeologic investigation may be required. If the lands in question lie in an area of limited groundwater, a hydrogeologic investigation shall be required. Should the investigation determine that significant pumping-related physical impacts will extend beyond the boundary of the property in question, those impacts shall be mitigated.
- c. A determination that the proposed water supply is sustainable or that there is an acceptable plan to achieve sustainability. The plan must be structured such that it is economically, environmentally, and technically feasible. In addition, its implementation must occur prior to long-term and/or irreversible physical impacts, or significant economic hardship, to surrounding water users.

Policy PF-C.23 Water Conservation Technologies

The County shall require that all new development within the county use water conservation technologies, methods, and practices as established by the County.

D. Wastewater Collection, Treatment, and Disposal

GOAL PF-D To ensure adequate wastewater collection and treatment and the safe disposal of wastewater.

Policy PF-D.6 On-site Sewage Disposal Systems

The County shall permit individual on-site sewage disposal systems on parcels that have the area, soils, and other characteristics that permit installation of such disposal facilities without threatening surface or groundwater quality or posing any other

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health hazards and where community sewer service is not available and cannot be provided.

E. Storm Drainage and Flood Control

GOAL PF-E To provide efficient, cost-effective, and environmentally-sound storm drainage and flood control facilities that protect both life and property and to divert and retain stormwater runoff for groundwater replenishment.

Policy PF-E.5 **Impacts to Flood Control Facilities**
The County shall only approve land use-related projects that will not render inoperative any existing canal, encroach upon natural channels, and/or restrict natural channels in such a way as to increase potential flooding damage.

Policy PF-E.6 **Drainage Facility Construction**
The County shall require that drainage facilities be installed concurrently with and as a condition of development activity to ensure the protection of the new improvements as well as existing development that might exist within the watershed.

Policy PF-E.9 **100-Year Flood Protection**
The County shall require new development to provide protection from the 100-year flood as a minimum.

Policy PF-E.11 **Natural Site Drainage Patterns**
The County shall encourage project designs that minimize drainage concentrations and maintain, to the extent feasible, natural site drainage patterns.

Policy PF-E.14 **Retention-Recharge Basins**
The County shall encourage the use of retention-recharge basins for the conservation of water and the recharging of the groundwater supply.

Policy PF-E.16 **Minimal Sedimentation and Erosion**
The County shall minimize sedimentation and erosion through control of grading, cutting of trees, removal of vegetation, placement of roads and bridges, and use of off-road vehicles. The County shall discourage grading activities during the rainy season, unless adequately mitigated, to avoid sedimentation of creeks and damage to riparian habitat.

Policy PF-E.20 **Storm Water Drainage Discharges**
The County shall require new development of facilities near rivers, creeks, reservoirs, or substantial aquifer recharge areas to mitigate any potential impacts of release of pollutants in flood waters, flowing rivers, streams, creeks, or reservoir waters.

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Policy PF-E.21 Best Management Practices

The County shall require the use of feasible and practical best management practices (BMPs) to protect streams from the adverse effects of construction activities and shall encourage the urban storm drainage systems and agricultural activities to use BMPs.

F. Landfills, Transfer Stations, and Solid Waste Processing Facilities

GOAL PF-F To ensure the safe and efficient disposal or recycling of solid waste generated in the county in an effort to protect the public health and safety.

Policy PF-F.1 Solid Waste Source Reduction

The County shall continue to promote maximum use of solid waste source reduction, reuse, recycling, composting, and environmentally-safe transformation of wastes.

Policy PF-F.5 County Integrated Waste Management Plan

The County shall ensure that all new development complies with applicable provisions of the County Integrated Waste Management Plan.

Open Space and Conservation Element

A. Water Resources

GOAL OS-A To protect and enhance the water quality and quantity in Fresno County's streams, creeks, and groundwater basins.

Policy OS-A.18 Groundwater Quality Protection

The County shall protect groundwater resources from contamination and overdraft by pursuing the following efforts.

- a. Identifying and controlling sources of potential contamination;
- b. Protecting important groundwater recharge areas;
- c. Encouraging water conservation efforts and supporting the use of surface water for urban and agricultural uses wherever feasible;
- d. Encouraging the use of treated wastewater for groundwater recharge and other purposes (e.g., irrigation, landscaping, commercial, and non-domestic uses);
- e. Supporting consumptive use where it can be demonstrated that this use does not exceed safe yield and is appropriately balanced with surface water supply to the same area;
- f. Considering areas where recharge potential is determined to be high for designation as open space; and
- g. Developing conjunctive use of surface and groundwater.

Policy OS-A.23 Wastewater Treatment Standards

The County shall only approve new wastewater treatment facilities that will not result in degradation of surface water or groundwater. The County shall require treatment to tertiary or higher levels.

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Fresno County Solar Facility Guidelines

The Fresno County Solar Facility Guidelines (Fresno County 2017c) contain the following provision pertaining to utilities and service systems:

Information shall be submitted that identifies the source of water for the subject parcel (surface water from irrigation district, individual well(s), conjunctive system). If the source of water is via district delivery, the applicant shall submit information documenting the allocations received from the irrigation district and the actual disposition of the water (i.e. utilized on-site or moved to other locations) for the last ten years. If an individual well system is used, provide production capacity of each well, water quality data and data regarding the existing water table depth[.]

The WSA prepared for the proposed VCIP is contained in Appendix F of this PEIR, and is summarized under Impact UTS-2 below.

Fresno County Local Agency Management Program (LAMP)

Pursuant to Water Code section 13291(b)(3), the Fresno County Local Agency Management Program (LAMP) was established in 2017 to regulate the design, installation, and operation of on-site wastewater treatment systems (OWTS) within the County. The program covers septic tank and leachfield systems for the treatment and disposal of wastewater where conveyance to public sanitary sewers is not available. The Fresno County Public Works and Planning Department is responsible for review and approval of proposed septic systems to ensure compliance with all applicable standards to avoid impacts to groundwater quality (Fresno County 2019a).

Fresno County Construction and Demolition Debris Recycling Program

The Fresno County Construction and Demolition (C&D) Debris Recycling Program is intended to implement the requirements of AB 939, as codified in the CALGreen Code, for achieving 65 percent reduction of C&D waste hauled to landfills. The program requires projects to submit a Waste Management Plan under which the applicant is to generate a waste log during construction and demolition. The reporting of C&D waste generation must include documentation of at least 65 percent diversion prior to issuance of Certificates of Occupancy for projects (Fresno County 2017a).

4.17.3. Environmental Impact Analysis

METHODOLOGY

This section evaluates potential impacts of VCIP implementation related to utilities and service systems based on a review of maps, plans, and published documents that may be relevant to the VCIP Plan Area, including: the General Plan and “General Plan Background Report” for Fresno County; reports and data from the SWRCB and its Regional Boards, CalRecycle, DTSC, and U.S. Environmental Protection Agency (EPA); plans, reports, and data from the District; and other published sources cited in Section 4.17.4. *References*. The analysis also considers current policies and regulatory requirements that may apply to VCIP projects, including those

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identified in *Section 4.17.2. Regulatory Context*, above. The evaluation of sufficiency of water supply to serve the VCIP is based on the WSA contained in Appendix F of this PEIR.

SIGNIFICANCE CRITERIA

Based on Appendix G of the state CEQA Guidelines, implementation of the VCIP would be considered to result in a potentially significant impact related to utilities and service systems if it would:

- a. Require or result in the relocation or construction of new or expanded water, wastewater treatment facilities or storm water drainage, electric power, natural gas, or telecommunications, the construction or relocation of which could cause significant environmental effects.
- b. Not have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years.
- c. Result in a determination by the wastewater treatment provider which serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.
- d. Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.
- e. Not comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

4.17.3.1. DIRECT AND INDIRECT EFFECTS

Impact UTS-1. Relocation or Construction of New or Expanded Utility Services

Implementation of the VCIP Energy Resource and Infrastructure Plans would not require or result in the relocation or construction of new or expanded facilities for water, wastewater treatment facilities or stormwater drainage, electric power, natural gas, or telecommunications, the construction or relocation of which could cause significant environmental effects; therefore, the impact would be *less-than-significant*. (*Less-than-Significant Impact*)

Water Treatment

Water used during the construction and decommissioning phases would generally come from groundwater within the District or water procured from other CVP or State Water Project contractors. This water would be used for dust control and soil conditioning. Construction water for potential VCIP projects on private lands would likely come from groundwater wells on the project sites or from its larger farm holding. Construction water for projects on District-owned lands would likely be purchased (via a District-approved groundwater transfer) from agricultural lands in the vicinity which are eligible for groundwater allocation, or from surplus

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District surface supplies (if available), or purchased from other sources. All construction water would be conveyed to the potential project sites via the District's water distribution pipeline system. This water would be stored in mobile tanks, which would be removed upon completion of both construction and decommissioning. During construction and decommissioning, drinking water for workers would be provided by bottled water delivered by truck.

During project operations, water would be used for maintenance activities and panel cleaning. On District-owned lands, potential VCIP projects would be eligible to receive M&I surface water deliveries through the District's existing conveyance system to meet operational demands. For solar and energy storage facilities located on privately-owned lands, operational water supplies would be provided by the underlying landowner from its surface and/or groundwater allocations. If the District cannot provide the surface water supply from its CVP contract, operational water would be obtained from existing on-site agricultural wells or from surface water transferred into the District. This water would also be conveyed to each project site through the District's existing facilities.

During facility operations, potable water would be delivered monthly by vendors to refill on-site water storage tanks used to provide water for drinking, hand washing, and toilet flushing. Therefore, no new, expanded, or relocated water supply or treatment facilities would be required for VCIP implementation, and as such there would be *no impact* associated with the relocation or construction of such facilities. During operations, potable water for domestic uses would be delivered to the facility by a water delivery service. The typical 250 MW solar plus energy storage facility would include a water storage tank for potable water, which would provide for drinking, hand washing, and toilet flushing at the O&M building. The water tank would be refilled regularly at a rate of approximately 5,000 gallons per month (i.e., the capacity of a standard water tanker truck). The potable water would be delivered to the O&M building through water pipes connecting the on-site water tank to the building.

(See Impact UTS-2 below for a detailed discussion of water supply.)

Wastewater Treatment

During construction and decommissioning of the VCIP energy and infrastructure projects, the sanitary needs of workers would be provided by portable chemical toilets which would be serviced by a licensed contractor as needed. During project operations, the typical 250-MW solar and energy storage facility would include an O&M building with sanitary facilities for permanent operational staff and for workers who would regularly be on-site for routine inspection, maintenance, and repair tasks. These sanitary facilities would be connected to an adjacent septic tank and leachfield system. The substations, gen-tie lines and transmission lines would not involve permanent staff and would not require wastewater treatment for operations.

The design and construction of septic systems are regulated under the Fresno County LAMP, which sets forth design criteria and standards for their installation. It is expected that the typical solar facility/BESS would have 10 operational staff on-site per day, along with a daily average of five occasional maintenance workers, for a daily average of 15 workers in total. Based on a peak wastewater generation rate of 50 gallons per day (gpd) per person, the average peak daily volume of wastewater generated would be approximately 750 gallons. This is well below the 2,500 gpd threshold where Waste Discharge Requirement (WDRs) would be required for a small community system from the Regional Water Quality Control Board (RWQCB). The septic and leachfield systems at the VCIP facilities may be subject to the approval of the Fresno County Department of Public Works {00079369.1}

and Planning, which would ensure compliance with all applicable standards to avoid impacts to groundwater quality (Fresno County 2019a). Therefore, the potential impacts associated with the on-site wastewater treatment systems for VCIP energy projects would be *less than significant*.

Stormwater Drainage

Most VCIP facilities would not require stormwater drainage facilities. Under current conditions, rainfall percolates into the soil with little or no runoff. The terrain of the Plan Area is virtually flat, with an average gradient of 0.4 percent, and implementation of the VCIP projects would not substantially modify existing site grades. The solar facilities would introduce very few structural elements with impervious surfaces that would impede direct percolation of rainwater into the soil. The equipment pads and small parking area would result in less than 1 percent impervious surface coverage of the site, with over 90 percent of the typical project site retained in vegetated cover and 9 percent devoted to permeable gravel driveways. 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 would become saturated and insubstantial volumes of stormwater may temporarily pond on the surface and gradually percolate into the soil, as occurs under existing conditions. Due to the virtually level ground conditions, the low levels of precipitation within the Plan Area (approximately 6 to 8 inches per year), and the very limited introduction of impervious surfaces to the site by the typical solar project, the potential for stormwater to be mobilized and concentrated in sustained runoff flows is unlikely to occur.

Some VCIP facilities, like stand-alone energy storage facilities and collection substations, may involve coverage of proportionally larger areas of their sites with impervious surfaces than discussed above for solar PV facilities. Depending on the circumstances of each potential project, site grading may be designed to direct increased stormwater runoff to on-site detention basins where the stormwater would percolate into the soil or evaporate.

The gen-tie and transmission lines would have very small footprints at the base of the towers, and thus would not generate increased runoff requiring stormwater drainage systems.

As discussed in Section 4.10. *Hydrology and Water Quality*, Fresno County Ordinance Code chapter 17.64 (drainage of land) requires projects to provide for control of drainage, stormwater runoff, and prevention of erosion and sedimentation. As applicable, these requirements would be implemented during review of construction plans and specifications prior to issuance of grading and building permits. Grading and construction activities would also be subject to BMPs for erosion and sedimentation as specified in SWPPPs required for each project by the Regional Board. If subject to chapter 17.64, a project proponent must retain a qualified civil engineer to prepare a hydrology study which would determine potential flood depths at the site and make recommendations for avoiding or mitigating potential flooding impacts. As provided in Section 4.10 *Hydrology and Water Quality*, it is anticipated that all inverter/transformer pads installed under VCIP projects would be located on raised foundation pads above the calculated flood elevations. Potential VCIP projects may also include recommendations for placement of detention basins along the project boundary to capture any overland stormwater flows and to provide flood storage for overbank flows from adjacent canals. Thus, any increase in storm flows would be accommodated by drainage infrastructure to be incorporated into the project. Therefore, the VCIP facilities would not require the construction of new or expanded stormwater drainage facilities beyond the boundaries of each VCIP project, and there would be *no impact* associated with the construction of such facilities.

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Electric Power

The VCIP projects would consist of power generating facilities and supporting infrastructure. Electric service from the existing PG&E system would be required for certain project phases. During construction, the VCIP energy projects and collection substations would receive service power from the existing electrical distribution lines that run through the Plan Area. The gen-tie and transmission lines would not require incidental or auxiliary power supply, except as may be provided by portable generators for some aspects of construction. During project operations, the solar facility would have service power available from PG&E's local distribution system when the project is not powered by on-site generation. During decommissioning, the service connections to PG&E's system would remain in place until they are no longer needed. The impacts associated with installation and removal of electrical service connections to the VCIP projects would be *less than significant*.

Natural Gas

The VCIP energy and infrastructure projects would not require the use of natural gas for power generation, facility operations or other purposes. Since the solar project would not require the installation of new natural gas facilities, there would be *no impact* associated with the construction of such facilities.

Telecommunications

Telecommunications to the VCIP energy facilities and collection substations would likely be provided via fiber-optic cable. Alternatively, telecommunications may be conducted wirelessly, in which case a telecommunications tower up to 100 feet tall would be included at the O&M facility. The installation of fiber optic cable or a telecommunications tower would not result in significant environmental impacts due to their insubstantial nature and very limited potential effects on existing conditions. The VCIP gen-tie and transmission lines would not require communications facilities. Therefore, the impacts associated with the installation of telecommunications facilities for the VCIP facilities would be *less than significant*.

Mitigation Measures: No mitigation is required.

Impact UTS-2. Sufficient Water Supplies to Serve the Project

There are sufficient water supplies available to serve the implementation of the VCIP Energy Resource and Infrastructure Plans during normal, dry and multiple dry years during a 20-year projection, in addition to existing and reasonably foreseeable future uses; therefore, the impact would be *less-than-significant*. (*Less-than-Significant Impact*)

A WSA pursuant to SB 610 was prepared for the proposed VCIP, which is contained in Appendix F of this PEIR. The WSA concluded that a combination of available groundwater supplies from the Subbasin and the District's surface water supplies would be sufficient to meet projected water demands for the construction and

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operation of VCIP projects 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 VCIP energy and infrastructure projects (WRP 2025).

Construction Water Demand and Supply

Water Demand

The total water demand from construction of VCIP energy and infrastructure projects would be approximately 20,838 AF over approximately 136,000 acres, or an average of 0.153 AF per acre (see Table 2 in GSA in Appendix F of this PEIR).

It is estimated that the full buildout of the VCIP Energy Resource Plan would require a total of 20,400 AF of groundwater for construction during the 10-year buildout period. Between years 2029 through 2032, construction demands would peak at 2,227 AFY, with approximately 14,771 acres of construction during each of these peak years. During the grading and construction for solar and energy storage projects, 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 Chapter 2. *Project Description*, it is estimated that a typical 250-MW solar project (with 250-MW battery storage facility) would require a total of 240 AF of water (at 0.15 AF per acre)³ over an approximately 1,600-acre site during its one-year construction period. This volume of groundwater use represents 25 percent of (i.e., four times less than) the 0.6 AF per acre per year allocation established by the GSP to achieve sustainable groundwater management and ensure pumping is within the long-term sustainable yield by 2040 through 2070. This allocation is designed to ensure pumping can continue during all water year types from 2030 through 2070. Thus, because the groundwater demands associated with VCIP construction would be significantly lower than the allocation established by the GSP, this groundwater supply would be available during all water year types for a 20-year projection.

As described in Chapter 2. *Project Description*, the VCIP infrastructure (collection substations, gen-tie lines, and connecting transmission lines) would involve the temporary disturbance of about 2,920 acres. Assuming the water usage rate would be similar to construction of the VCIP solar and energy storage facilities, or 0.15 AF per acre, the total water demand for infrastructure construction would be approximately 438 AF over a 10-year construction period.

Bottled water would be provided to the construction workers for consumption. Water is not needed for sanitary needs during construction; portable chemical toilets would be provided and serviced as needed by a private contractor.

Water Supply

Construction water would generally come from groundwater within the District or water procured from other CVP or State Water Project contractors. For the construction of solar energy generation and infrastructure projects on both private and District-owned lands, groundwater in the Subbasin is considered available and reliable under normal water years, a single dry water year, and multiple dry years, as shown in Table 8 of Appendix F of this PEIR.

For VCIP development on privately-owned lands, the water supplies for construction would be obtained from agricultural wells on the project site or nearby. Potential VCIP projects located on privately owned lands would be located on lands that are registered for a groundwater allocation pursuant to the GSP and the District's Rules and Regulations. Based on the long-term groundwater pumping limit of 0.6 AF/acre per year (AFY/acre) established under the GSP, the overall

³ Based on actual water volume consumed during construction of three utility-scale solar projects in Kings County with a combined generating capacity of 650 MW. Average construction water consumption for the three projects was 0.09 AF/ac. The demand factor is based on the highest consumption of 0.15 AF/ac for the Aquamarine Solar Facility during 2021 (a very dry year)(Biller 2024-2025).
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pumping limit on 64,000 acres of solar facilities on private lands would be 38,400 AFY, which would be more than sufficient to provide for the total construction water demands projects on those lands. For comparison, construction water demands for VCIP implementation would peak at 2,227 AFY; this is below the pumping limitation of 8,863 AFY calculated based on the 0.6 AFY groundwater allocation on 14,771 acres of construction or decommissioning during each of these peak years.

Construction water for projects on District-owned lands would likely be purchased (via a District-approved groundwater transfer) from agricultural lands in the vicinity which are eligible for groundwater allocation, or from surplus District surface supplies (if available), or purchased from other sources. As more particularly described in Appendix F, pursuant to Article 1 of the District's Rules and Regulations, projects on District-owned land may purchase groundwater credits from private landowners and extract that water from wells located on District-owned land or transfer the groundwater via a pipeline to a project located on District-owned land. Transferred groundwater credits may be extracted from District-owned land, including from abandoned wells, or transferred to District-owned lands from private wells. Thus, unused groundwater allocations (or carryover credits) from privately owned lands within the DFAs may be transferred to District-owned lands. However, given the broad distribution of District-owned lands throughout the Plan Area, this groundwater supply could come from anywhere in the District, but most likely would come from lands adjacent to or near the District-owned lands in northern and eastern portions of the Plan Area. Thus, while District-owned lands could also purchase water from outside the District and have it delivered to the project site via the District's water distribution system in some years, groundwater would be available to meet all construction demands on these lands.

In summary, as discussed above in Section 4.17.2. *Regulatory Context*, the GSP for the Subbasin has established a long-term limit on groundwater pumping at 0.6 AFY per acre. The GSP and the District's Rules and Regulations also allow groundwater transfers to projects on District-owned lands. Given that construction water demand represents a one-time use of water, to be applied for less than one year at each location, the overall construction demand is expressed as 0.153 AF per acre. Thus, for projects solely dependent on groundwater, in the construction year that groundwater is used at any given location, the demand of 0.153 AF per acre would be well within the GSP allocation of 0.6 AF per acre per year. Therefore, sufficient groundwater is available to supply construction water demands for full VCIP implementation during all water year types, and the impact of VCIP construction upon available water supplies would be *less than significant*.

Operational Water Demand and Supply

Water Demand

During operation of each solar facility, non-potable water would 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 6.05 AF per year over a typical 1,600-acre project site, or 0.004 AF per acre per year, or 0.64 AF per quarter-section (160 acres). Implementation of all solar/BESS facilities under the proposed VCIP would result in cumulative operational water demands of 514 AF. For context, the average rate of applied water for agricultural irrigation within the District is approximately 2.6 AFY per acre (or 416 AFY per quarter section).

Potable water for domestic uses would be delivered to the facility by a water delivery service. The typical 250 MW solar plus energy storage facility would include a water storage tank for potable water, which would provide for drinking, hand washing, and toilet flushing at the O&M building. The water tank would be refilled regularly at a rate of approximately 5,000 gallons per month (i.e., the capacity of a standard water tanker truck), for a total of approximately 16 AFY for full VCIP implementation. The potable water would be provided by a commercial supplier who would purchase it from a municipal water source outside the Subbasin. Given the small quantities of potable water that would be required and

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multiple water delivery services within the vicinity of the Plan Area, there are sufficient supplies to meet all potable water demands.

Water Supply

Depending on land ownership, it is anticipated that operational water would be obtained from a combination of existing agricultural wells in the Plan Area, surface water provided by the District for projects on District-owned and private land, and supplemental surface supplies procured by the District and private landowners.

For potential VCIP projects on existing District-owned lands, the District would provide operational supplies with M&I surface water deliveries through its existing system of lateral pipelines. These lands are eligible for allocation or delivery of water under Reclamation law and any applicable District Regulation as described in *Article 2, Regulations for the Allocation and Use of Agricultural Water within Westlands Water District*, as revised September 2023, and *Article 19, Regulations Regarding the Application for and Use of Municipal and Industrial Water within Westlands Water District*. Pursuant to Article 19, solar PV facilities on District-owned or reconveyed lands are eligible to receive up to 5.0 AFY per quarter-section for operational uses. As noted above, the operational water usage rate at a typical 250-MW solar and energy storage facility is estimated to be 0.64 AF per quarter-section per year, which is well within the District's maximum annual allowance of 5.0 AFY per quarter-section (i.e., on District-owned land). During years of extreme shortage of surface water supplies, the District would continue to provide M&I supplies to solar and energy storage facilities on District-owned lands through its health and safety allocation from USBR. Given the very low operational water demand rate of 0.004 AFY per acre, the District would provide operational water to facilities on District-owned land even under curtailed supply conditions. Further, project proponents may also purchase groundwater credits from other landowners for use on District-owned lands. As illustrated in Appendix F, Table 6, the District and users within its service area have augmented available CVP supplies with other surface water sources during each year since 1988, particularly during dry years. For example, in 2021, despite no initial allocation from the CVP, the District and its water users secured 173,000 AF of surface water from the CVP and an additional 44,000 AF of surface water from other non-CVP contract sources for irrigation during the 2021 water year. Due to the established market for these purchases and their longstanding availability during all water year types, it is anticipated that these additional sources will continue to be available, which bolsters water supply reliability. As such, sufficient water supplies are available to supply these operational water demands associated with VCIP implementation, and the impact of such operations upon available water supplies would be less than significant.

For potential VCIP projects on privately owned lands, it is anticipated that operational water would be obtained from a combination of existing agricultural wells in the Plan Area, surface water provided by the District, and supplemental surface water supplies procured by the District and/or private landowners. Solar development resulting from privately-owned land participating in the "Continued Benefits to Modified Agricultural Land" are not eligible to submit a M&I Water Application pursuant to Article 19 and would obtain any surface water from the allocations to the underlying private landowners, which would be determined on a case-by-case basis (WWD 2023a). If the District cannot provide the surface water supply from its CVP contract, operational surface water would be obtained from supplemental surface water supplies procured by the District and/or private landowners, as described above and in Appendix F. If needed, the 0.6 AFY per acre GSP allocation for all privately owned lands within the proposed DFAs would be more than sufficient to meet all operational demands. Given the availability of sufficient water supplies for operations on potential VCIP projects on private lands, the impact of such operations upon available water supplies would be less than significant.

Potable water for domestic uses would be delivered to the facility by a water delivery service. The typical 250 MW solar plus energy storage facility would include a water storage tank for potable water which would provide for drinking, hand washing, and toilet flushing at the O&M building. The water tank would be refilled regularly at a rate of approximately 5,000 gallons per month (the capacity of a standard water tanker truck), {00079369.1}

for a total of approximately 16 AFY for full VCIP implementation. Given the small quantities of potable water that would be required and multiple water delivery services within the vicinity of the Plan Area, there are sufficient supplies to meet all potable water demands and the impact of supplying this water upon available supplies would be less than significant.

In sum, for the reasons provided above, sufficient water supplies are available to supply operational water demands for full implementation of the VCIP, and the impact of VCIP operations upon available water supplies would be *less than significant*.

Decommissioning Water Demand and Supply

Decommissioning water would be used for the same purposes as during construction and would be available through the sources identified regarding construction. All decommissioning water would generally come from groundwater within the District.

Untreated groundwater would be required during decommissioning of each solar and energy storage facility, although the volume of water required is expected to be less than the volume required during the construction phase. Since vegetative cover would be retained on each site during decommissioning, there would be very little exposed soil that would require watering for dust suppression. Similarly, water would not be required for soil conditioning during grading (*cf.* construction, which requires prescribed moisture content for compacted soils). The VCIP infrastructure facilities (collection substations, connecting transmission line) would not be decommissioned, but the gen-tie lines would be. The source of water during decommissioning is expected to be from the existing agricultural wells located in the vicinity of each facility, although portion may come from surface water supply from the District.

The total groundwater used during decommissioning is expected to be substantially less than the estimated 240 AF required during construction of a typical 250-MW solar and energy storage project located on an approximately 1,600-acre site. However, total water demand for energy facility decommissioning is conservatively estimated to be the same as construction demand, or approximately 20,400 AF. Gen-tie decommissioning would use an additional 232 AF, for a total of 20,632 AF for decommissioning. This would represent an average volume of about 0.152 AF per acre. This quantity is substantially less than the 0.6 AFY per acre allocation established by the GSP to achieve sustainable groundwater management and ensure pumping is within the long-term sustainable yield. Therefore, the limited water demands during decommissioning would be consistent with and promote sustainable groundwater management of the Subbasin. The groundwater pumped during decommissioning would not substantially decrease groundwater supplies or contribute to the lowering of the local groundwater table. Therefore, sufficient groundwater is available to supply the full demands related to VCIP project decommissioning, and the impact of VCIP decommissioning upon available water supplies would be *less than significant*.

Summary

Construction of all 21,000 MW of the VCIP energy and infrastructure projects would require a total of 20,838 AF of water over an approximately 10-year period. Decommissioning would have a total water demand of 20,632 AF over approximately an additional 10-year period in the future. The combined total water demand for construction and decommissioning would be approximately 41,470 AF over a combined 20-year period. For comparison, the irrigation demand on 64,000 acres of the irrigable (privately-owned) land within the DFAs (noting that the 72,000 acres of District-owned land in VCIP is not irrigable) would require a total of 166,400AFY, or 3,328,000 AF over a 20 year period (at the District average irrigation rate of 2.6 AFY per acre). Thus, the total water demand for VCIP construction and decommissioning over a 20-year period—would be equivalent to approximately 25 percent of one year's worth of

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agricultural irrigation on the VCIP development land in one year. Construction water demands for VCIP implementation would peak at 2,227 AFY; this is below the pumping limitation of 8,863 AFY calculated based on the 0.6 AFY groundwater allocation on 14,771 acres of construction or decommissioning during each of these peak years. As described above, groundwater would generally be used for construction water on both private and District-owned lands pursuant to groundwater allocations or District-approved transfers, although surface water may also be available in some years.

Operation and maintenance of VCIP solar and energy facilities would require about 0.004 AFY per acre (0.64 AFY per quarter-section per year) of water, for a total of 514 AF per year for all VCIP facilities upon completion. For potential VCIP projects on District owned lands, these demands are well within the District's maximum annual allowance of 5.0 AFY per quarter-section for solar projects pursuant to Article 19 of the District's Rules and Regulations. For potential VCIP projects on privately owned lands, the groundwater allocation of 0.6 AFY would be more than sufficient to provide for the maximum operational water demands. Additionally, if the District cannot provide the surface water supply from its CVP contract to potential VCIP projects on privately owned lands, operational surface water would be obtained from supplemental surface water supplies procured by the District and/or private landowners, as described above and in Appendix F.

In conclusion, the groundwater and surface water supplies available for construction, operation, and decommissioning of VCIP facilities are sufficient to meet the needs of the VCIP implementation. The use of these supplies would be consistent with the GSP and the District's Rules and Regulations. Therefore, the impact of the implementation of the VCIP Energy Resource and Infrastructure Plans upon available water supplies would be *less than significant*.

Reasonably Foreseeable Future Uses

Other planned uses in the Subbasin consist almost entirely of other solar PV generation and energy storage facilities in Kings and Fresno Counties. As of July 2025, a total of 51 other solar and energy storage projects have been approved or are pending approval in the Subbasin portions of the two counties. Of these, 39 solar and energy storage projects have been completed, another 10 solar and energy storage projects have been approved, and two projects are pending approval by the counties.⁴ It is estimated that the unconstructed projects would consume a total of approximately 2,156 AF of water during construction. For five of these projects, this estimate is based on information available from public documents; for the remaining seven projects where no public documents contain water demand estimates, construction water demands were estimated based on a factor of 0.15 AFY/ac.

Based on review of available environmental documents for foreseeable solar and energy storage projects in the Subbasin, construction water for the solar and energy storage projects would generally be obtained from local groundwater sources within the Subbasin, but surface water will be available in some years (Fresno County 2021b, 2023d, 2024f). Groundwater would be obtained pursuant to groundwater allocations or transfers. As noted above, although some surface supplies may be available from the District in some years for construction, this is not guaranteed and is not considered reliable for purposes of water supply planning. Similarly, some projects may purchase supplemental surface water supplies from outside the District for construction, but these volumes vary from year to year and cannot be predicted. Based on the GSP, the expected construction water demand of 0.15 AF per acre would not exceed 0.6 AFY per acre allocation and would be consistent with the Subbasin's long-term sustainable yield. Due to their similarities to the potential

⁴ This does not include four solar/BESS projects (2 approved + 2 pending) located within the VCIP DFAs, since the water demands for those projects have been accounted for in the water supply analysis for the VCIP.
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VCIP projects, the operational water demands of these other projects would likely be similar to those associated with VCIP solar and energy storage facilities (i.e., approximately 0.004 AFY per acre).

As discussed, operational water for the other (i.e., non-VCIP) solar and energy storage projects would be available from a combination of surface water and groundwater sources, depending on the facts applicable to each project, such as whether it is located on privately owned or District-owned land. As provided above, for projects on District-owned lands, sufficient operational M&I supplies would be available pursuant to Article 19 of the District's Rules and Regulations. For solar and energy storage facilities located on privately-owned lands, operational water supplies would be provided by the underlying landowner from its surface and/or groundwater allocations. If the District cannot provide the surface water supply from its CVP contract, operational water would be obtained from existing on-site agricultural wells or from surface water transferred into the District. For these projects on privately owned lands, the ratio of surface vs groundwater supply would depend on negotiations with the underlying landowner in each project case. Since this ratio cannot be predicted, it is conservatively assumed that all operational water supplies for energy projects on private lands would be obtained from groundwater, which would be available during all water year types. These operational water demands would be well below the 0.6 AFY per acre allocation and therefore consistent with the Subbasin's sustainable yield.

In addition to solar and energy storage projects, six other projects are pending approval in the Subbasin. These include three pistachio processing plants, two highway commercial developments, and one utility substation (Manning Substation). The Kamm Avenue pistachio plant will utilize 209 AFY of untreated M&I water provided by the District, and will not utilize groundwater (Fresno County 2021a). The Stamoules Pistachio plant would extract 955.5 AFY of groundwater pursuant to agreement with the District, which will ensure groundwater pumping complies with the allocations established in the GSP for the Subbasin (Fresno County 2023e). No water supply information is available on the Turk Station Pistachio Plan (CUP 3649); however, groundwater use would be subject to an agreement with the District which would ensure groundwater pumping complies with the allocations established by the GSP. The highway commercial project at I-5/SR-198 9 (CUP 3761) is proposed to receive 9.7 AFY of untreated M&I water from the District's surface water deliveries. The agricultural commercial center at SR-198/SR-269 (CUP 3797) would receive an unknown volume of untreated M&I water from the District's surface water deliveries (Fresno County 2025d). The construction of the Manning Substation would require 61.4 AF, which would be provided by M&I water from the District or groundwater. The substation would require no water supply for operations (CPUC 2025).

In addition to the reasonably foreseeable development discussed above, the water supply sources for the rural communities of Cantua Creek and Three Rocks/El Porvenir are planned to convert from surface water provided by the District to groundwater pumped from newly constructed wells in these communities. There is a concern that the VCIP solar and energy storage development in the vicinity of the new community wells may result in further overdraft of the aquifer causing these new wells to go dry. However, this outcome is not reasonably foreseeable for the following reasons. First, if properly constructed, the wells would be screened below the 2015 groundwater elevation, which is the "minimum threshold level" established in the District's GSP. The Fresno County Department of Public Works, as operator for the Cantua Creek and Three Rocks/El Porvenir County Service Areas (CSAs), would be required to submit the well plans to the District, as the Groundwater Sustainability Agency (GSA), which would determine if the plans comply with the Groundwater Sustainability Plan (GSP). Since the wells would be required to be constructed in accordance with the GSP, with District oversight, there would be no substantial risk of the new wells going dry. Second, under the GSP,

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beginning in 2030 all groundwater pumping in the District will be limited to 0.6 AF per acre to maintain sustainable groundwater levels (construction of potential VCIP projects in the Cantua Creek and Three Rocks area would be planned to begin in 2031). Third, solar and energy storage facilities would have water demands of 0.15 AFY per acre during construction and 0.004 AFY per acre during long term operations, both of which are well below the maximum allowable 0.6 AFY per acre pumping volume under the GSP. Fourth, all agricultural wells in the District are equipped with meters to track actual pumping rates, with penalties enforced if the limit is exceeded. Fifth, solar and energy storage facilities will have access to surface water and might use this supply source in lieu of groundwater. Therefore, the District anticipates compliance with the pumping limits and does not foresee a potential decline in groundwater levels below the minimum threshold level set forth in the GSP. Therefore, the risk that the two planned community wells to serve Cantua Creek and Three Rocks, or any other properly constructed wells in the District, would go dry is insubstantial.

In conclusion, based on the above analysis and Appendix F, there are sufficient water supplies available to serve implementation of the VCIP Energy Resource and Infrastructure Plans during normal, dry and multiple dry years during a 20-year projection, in addition to existing and reasonably foreseeable future uses. Therefore, any potential impacts related to water supply would be *less than significant*.

Mitigation Measures: No mitigation is required.

Impact UTS-3. Wastewater Treatment and Disposal

The VCIP solar and energy storage facilities would be served by individual septic systems, which would be located, designed, constructed, operated, and maintained in accordance with Fresno County and Regional Water Quality Control Board requirements and standards, such that potential impacts to wastewater treatment capacity would be less than significant. (*Less-than-Significant Impact*)

As discussed in Section 4.17.1. *Environmental Setting*, two unincorporated communities (Cantua Creek and Three Rocks/El Porvenir) within the VCIP Plan Area are served by community wastewater collection and treatment systems. The communities of O'Neill Ranch/Westside and Five Points are served by individual septic systems, as are the individual rural dwellings, ranches, commercial centers, and agricultural processing facilities in the Plan Area. The adjacent and nearby communities with larger wastewater collection and treatment systems include the cities of Mendota, Coalinga, Huron, and Lemoore, and NAS Lemoore.

As discussed under Impact UTS-1 above, the wastewater generated by individual solar and energy storage projects within the Plan Area would be conveyed to on-site septic systems for on-site treatment and disposal. The VCIP infrastructure facilities (collection substation, gen-tie lines, and collector transmission line) would not be staffed and would not require wastewater collection and treatment service. The septic systems at the solar and energy storage facilities would be designed in accordance with design criteria and standards established by the County's LAMP requirements, which have been approved by the RWQCB, and would be subject to the approval of the Fresno County Department of Public Works and Planning, which would ensure compliance with all applicable standards in order to avoid any adverse impacts to groundwater quality. Since the wastewater disposal requirements of the VCIP solar and energy storage projects would be adequately served by dedicated

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on-site septic systems, they would not be served by a community wastewater treatment provider. Therefore, the implementation of the VCIP Energy Resource and Infrastructure Plans would have *a less than significant* impact on wastewater treatment capacity.

Mitigation Measures: No mitigation is required.

Impact UTS-4. Solid Waste and Landfill Capacity

The VCIP energy and infrastructure projects would not generate solid waste in excess of state or local standards, in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste goals. (*Less-than-Significant Impact*)

The development of VCIP energy and infrastructure projects would generate solid waste during their construction, operational, and decommissioning phases. The solid waste impacts of all phases of VCIP implementation are discussed below. The following discussion is focused on non-hazardous solid waste only. Hazardous waste disposal, including disposal of damaged or defective solar modules is addressed in Section 4.9. *Hazards and Hazardous Materials*.

Construction Phase

During construction of the VCIP energy and infrastructure projects, 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 crop remnants, it is anticipated that minimal green waste would be generated. Based on construction waste generation rate of 10 cubic yards (cy) per MW for similar solar PV/BESS projects, the typical 250 MW solar + 250 MW energy storage project under the VCIP would generate a total of 2,500 cy of construction waste for disposal (Fresno County 2021c). It is anticipated that 65 percent of this construction waste would be recycled as required under the CALGreen Code (CBSC 2024). Much of the construction waste materials would be reusable (e.g., wood pallets and packing crates), or recyclable (e.g., scrap metal, paper, glass), and doing so has been shown to be cost effective (CalRecycle 2024b). The construction of all potential VCIP facilities (i.e., 21,000 MW of solar plus energy storage facilities) would generate a total of 210,000 cy of construction waste, of which 136,500 cy (i.e., 65 percent) would be recycled. The remaining construction waste to be landfilled would be 73,500 cy, or approximately 23.7 cy per day, assuming 10 years of disposal and 310 disposal days per year. This equates to 5.7 tons per day, based on a conversion factor of 0.24 tons per cy of construction waste (FDEP 2017). Assuming all the non-recyclable construction waste would be hauled to American Avenue Landfill, the 5.7 tons of daily construction waste generated by VCIP projects would represent about 0.3 percent of the average daily permitted solid waste disposal at the landfill (2,200 tons per day)⁵. Additionally, the total 73,500 cy of non-recyclable construction waste generated during the entire VCIP construction period would represent 0.4 percent of the approximately 17.97 million cy of remaining capacity of the American Avenue Disposal Site (American Avenue Landfill or landfill). Both the daily disposal rate and the total construction

⁵ Average daily permitted disposal is 2,200 tons per day, with a peak permitted disposal of 3,600 tons per day. {00079369.1}

waste generated by VCIP projects would represent insubstantial increases in solid waste accepted at the American Avenue Landfill and therefore would not exceed the landfill's capacity. Additionally, Fresno County's budget reports illustrate that the County's adopted budgets for the years of 2022-2023 and 2023-2024 appropriated over \$38 million for the expansion of the American Avenue Landfill (Fresno County 2022, 2023f). The recommended budget for 2024-2025 proposes to appropriate over \$12 million of additional funds to finance the landfill's expansion. The budgets for each of these fiscal years "assumes operating the disposal site with tonnages averaging 2,200 tons per day" (Fresno County 2022, 2023f, 2024a.) Thus, the County's proactive landfill expansion efforts will ensure that the landfill will be able to reliably operate at its maximum daily capacity and may foreseeably extend its operating life due to increased capacity. For these reasons, the solid waste generated by the potential VCIP projects will not exceed the capacity of the American Avenue Landfill or impair its solid waste management.

The construction of the VCIP infrastructure projects (collection substations, gen-tie lines, connecting transmission lines) 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. The remaining construction waste materials would be disposed of at the American Avenue Landfill. The small amounts of solid waste generated by construction of the VCIP infrastructure would have minimal effects on the landfill's capacity.

Operational Phase

During operation of the VCIP solar and energy storage 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. Based on the operational waste generation rate of 1 cy per week for similar solar PV plus storage projects, the typical 250 MW solar + 250 MW energy storage project under VCIP would generate a total of approximately 52 cy of solid waste (0.21 cy per MW) for disposal at a Class III landfill per year (Fresno County 2021c). This assumes 50 percent of the generated solid waste has been diverted through recycling, and also that 1 cy of solid waste from solar facilities is equivalent to 1 ton of solid waste with minimal compaction.

At full buildout of the 21,000 MW of VCIP solar and energy storage facilities, the total operational solid waste generation would be 4,410 cy (or tons) per year, or 14.2 cy (or tons) per day, assuming 310 disposal days per year, which represents about 0.65 percent of the average daily permitted disposal rate of 2,200 cy at the American Avenue Disposal Site. The solid waste generated at the VCIP energy facilities would represent a small increase in daily and annual solid waste accepted at the American Avenue Landfill and would therefore not exceed its capacity or impair its solid waste management.

For purposes of this PEIR, it is assumed that the VCIP solar and energy storage facilities would have an average useful life of 35 years. The total volume of solid waste generated for disposal by facility operations over this period is estimated to be approximately 176,400 cy, which would represent 0.1 percent of the remaining capacity at the American Avenue Landfill. The VCIP infrastructure facilities would not generate substantial amounts of solid waste during their operating years. Thus, the solid waste generated by the operation of VCIP energy and infrastructure facilities would not appreciably shorten the operating life of the American Avenue Landfill.

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Decommissioning Phase

At the end of their useful lives, the VCIP solar and energy storage facilities would be deconstructed in accordance with their approved decommissioning plans. Under the plans, the equipment and fixtures, such as solar modules and racking, and storage batteries, would be recycled and reused to the extent practicable. Some materials may be returned to the manufacturer for reuse or otherwise reused on the secondary market. Waste materials that are not salvaged for reuse would be hauled to the American Avenue Landfill, where non-recyclables would be landfilled. Assuming that the volume of landfilled solid waste from decommissioning would be similar to the solid waste disposed during construction, the approximately 73,500 cy to be disposed would represent 0.4 percent of the approximately 17.97 million cy of remaining capacity of the American Avenue Landfill.

Overall VCIP Solid Waste Disposal

The total volume of non-recyclable solid waste generated by the construction, operation, and decommissioning of the VCIP projects is estimated to be approximately 323,400 cy. This represents 1.8 percent of the 17.97 million cy remaining capacity of the American Avenue Landfill. Thus, the total solid waste generated by VCIP projects during their lifetimes would represent a small portion of the remaining disposal capacity at the American Avenue Landfill.

As noted in Section 4.17.1. *Environmental Setting*, it is estimated that the American Avenue Landfill will reach capacity in 2043. As such, the landfill would have sufficient capacity to receive solid waste generated during buildout of the VCIP facilities which are planned to be completed by 2039. However, the American Avenue Landfill would not be available to serve VCIP facilities during their entire operating lives which would extend well beyond 2043, and would not be available to receive VCIP decommissioning waste several decades in the future. However, to comply with the California Integrated Waste Management Act, discussed in Section 4.17.2. *Regulatory Context*, Fresno County will be required by state law to continue to demonstrate, over a five-year reporting cycle, that it has at least 15 years of remaining landfill capacity available in the County. Given this statutory requirement, it is expected that the County will have demonstrated that it has sufficient remaining landfill capacity to serve continued VCIP operations and decommissioning well before the American Avenue Landfill has reached capacity. As discussed above, the County's recent budget allocations for the expansion of the American Avenue Landfill demonstrate the County's proactive efforts to ensure the expansion of the landfill so that it will be able to reliably operate at its maximum daily capacity and may foreseeably extend its operating life due to increased capacity. For these reasons, the solid waste generated by the potential VCIP projects will not exceed the American Avenue Landfill

Regarding solid waste collection service, the VCIP facility operators would contract with a commercial waste collection service which would haul the waste to the Midvalley transfer station near Kerman for sorting and recycling prior to disposal of non-recyclable solid waste at the American Avenue Landfill. It is expected that the increased service demands from the solar and energy storage facilities would be met through incremental increases in staff and equipment, which would be funded through fees for service.

In summary, the solid waste generated during the construction, operations, and decommissioning phases of VCIP energy and infrastructure projects would not exceed landfill disposal capacity in the County. The salvage and recycling practices implemented during construction, operation, and decommissioning would reduce the amount of solid waste that would be landfilled. As discussed under Impact UTS-5 below, the VCIP projects

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would comply with all solid waste reduction requirements and would not impair their attainment. Therefore, the impact of VCIP implementation in terms of solid waste disposal would be *less than significant*.

Mitigation Measures: No mitigation is required.

Impact UTS-5. Compliance with Solid Waste Laws and Regulations

The energy and infrastructure projects developed under the VCIP would comply with applicable laws and regulations related to the management and reduction of solid waste. (*Less-than-Significant Impact*)

Implementation of the VCIP energy and infrastructure projects would be subject to laws, regulations, and policies pertaining to solid waste, source reduction, and recycling as described in Section 4.17.2. *Regulatory Context*. In accordance with AB 939 and the CALGreen Code, a C&D Waste Management Plan would be prepared for the VCIP projects, which would ensure that 65 percent of all construction waste is recycled (Fresno County 2024c). Solid waste generated during project decommissioning would be addressed in the decommissioning plan required by Fresno County for each project. To minimize disposal at landfills, the decommissioning plans would require that all project components be reused or reclaimed to the extent practicable, with the remaining materials being recycled or sold for scrap.

The VCIP solar and energy storage projects would generate an estimated total of 323,400 cy of non-recyclable solid waste during their construction, operations, and decommissioning phases. As discussed under Impact UTS-4 above, there is expected to be sufficient landfill capacity to accept all anticipated solid waste generated by VCIP projects. Project waste would be disposed of consistent with applicable federal, state, and local recycling, reduction, and waste requirements and policies. Therefore, the implementation of the VCIP Energy Resource and Infrastructure Plans would have *no impact* in terms of compliance with applicable laws and regulations related to the management and reduction of solid waste.

Mitigation Measures: No mitigation is required.

4.17.3.2. TRANSMISSION CORRIDORS OUTSIDE THE VCIP

The transmission corridors for delivery of solar generation from potential VCIP projects to urban electricity markets in northern and southern California have been identified at a conceptual level in this PEIR to allow a general discussion of environmental impacts associated with transmission line development in these corridors for informational purposes. These transmission delivery corridors extend far beyond the District's boundaries and are not part of the proposed VCIP. Planning and approval of these outside transmission lines are under the jurisdiction of the state and federal energy regulatory agencies, public utilities, and cities and counties traversed

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by the transmission corridors. The following discussion provides an overview of potential impacts of the outside transmission lines with respect to utilities and service systems.

Water Supply

During construction of the outside transmission lines, small volumes of non-potable water would be required for dust control. As noted in Table 2.6-1, the outside transmission projects would result in the disturbance of approximately 4,295 acres at the tower sites, the conductor pulling sites, and the construction staging areas. At a demand rate of 0.15 AF per acre, the total water supply required for construction of 348 miles of transmission corridor would be approximately 644 AF. This is equivalent to the annual irrigation requirements for about 250 acres of land in agricultural production. The construction water would be obtained from various sources such as agricultural wells and municipal water systems and trucked to the work sites for application. Sufficient water supplies are expected to be available to meet the relatively low construction water demands at any given location along the transmission corridors. During operation of the transmission lines, no water would be required. In summary, it is anticipated there would be sufficient water supplies to meet the demands of outside transmission lines during construction and operation, in addition to existing and projected demands, and there would be no need for new or expanded water supply facilities.

Wastewater Treatment

During construction, the sanitary needs of workers on the outside transmission lines would be provided by mobile portable chemical toilets. The operation of the outside transmission lines would have no permanent staff and thus would not require wastewater collection or treatment. Therefore, the outside transmission lines would have no effect on wastewater treatment capacity. In summary, the outside transmission lines would not require wastewater treatment during construction or operation, and there would be no need for new or expanded wastewater treatment facilities.

Solid Waste

The construction of the outside transmission lines 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. The remaining construction waste materials would be disposed of at local landfill facilities along the transmission routes. The operation of the outside transmission lines would not generate substantial amounts of solid waste. The small amounts of solid waste generated by the outside transmission lines would have no discernable effects on the capacity of local landfill facilities. The construction and operation of the outside transmission lines would be undertaken in compliance with applicable laws and regulations related to the management and reduction of solid waste.

Stormwater Drainage, Electric Power, Natural Gas, and Telecommunications Systems

The outside transmission lines would have very small footprints at the base of the towers, and thus would not generate increased runoff requiring stormwater drainage systems.

During construction, the outside transmission lines would not require incidental or auxiliary power supply, except as may be provided by portable generators for some aspects of construction. No power supply would be required to operate the transmission lines.

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The outside transmission lines would not require the use of natural gas for any purpose during construction or operation.

The outside transmission lines would not require communications facilities during construction or operation.

In summary, the outside transmission projects would not require or result in the relocation or construction of new or expanded facilities for stormwater drainage, electric power, natural gas, or telecommunications.

4.17.3.3. CUMULATIVE IMPACTS

The methodology for conducting the cumulative impact analysis is described in Section 4.0.5. *Cumulative Impacts*. The analysis considers whether the impacts of two or more past, present, or reasonably foreseeable future projects, including the proposed VCIP, would combine to result in a cumulatively significant impact.

Regarding water supply, most of the cumulative projects in the Subbasin consist of other solar PV generation and energy storage facilities in Kings and Fresno Counties (non-solar projects are discussed below). As of July 2025, a total of 51 other solar and energy storage projects have been approved or are pending approval in the Subbasin portions of the two counties.⁶ Of these, 39 solar and energy storage projects have been completed, another 10 projects have been approved, and an additional two projects are pending approval by the two counties. It is estimated that the 12 unconstructed solar/BESS projects would consume a total of approximately 2,156 AF of water during construction. For five of these projects, this estimate is based on information available from public documents; for the remaining seven projects where no public documents contain water demand estimates, construction water demands were estimated based on a factor of 0.15 AFY/acre (see explanation in footnote 3 above for the basis for this factor).

In addition to solar and energy storage projects, five other industrial and commercial projects are approved or pending approval in the Subbasin. These include three pistachio processing plants and two highway commercial developments. There is no information in available public documents regarding construction water use for these projects. As such, the standard construction water factor of 0.15 AF/acre was applied to the combined acreage of these projects (885 acres) to reach an estimated 133 AF of construction water demand. Also proposed within the subbasin is the Manning Substation project, which would require water supply of 61 AF for construction (CPUC 2025d). The total water supply required for construction of the non-solar/BESS within the Subbasin would be 194 AF.

The total construction water demand from the unconstructed cumulative projects would be the sum of VCIP projects (20,838 AF), non-VCIP solar and energy projects (2,156 AF), and other non-VCIP projects in the Subbasin (194 AF), for a cumulative total of 23,188 AF, over a cumulative land area of 147,019 acres. This represents a cumulative pumping rate of 0.158 AF/acre which is substantially below the long-term groundwater allocation of 0.6 AFY/acre for the Subbasin.

⁶ The total does not include four solar/BESS projects (2 approved + 2 pending) located within the VCIP DFAs, since the water demands for those projects have been accounted for in the water supply analysis for the VCIP. {00079369.1}

Based on review of available environmental documents for foreseeable solar and energy storage projects in the Subbasin, construction water for the solar and energy storage projects would generally be obtained from local groundwater sources within the Subbasin, but surface water would be available from the District in some years. Although the source of construction water for most approved and pending non-energy projects has not been publicly disclosed, it is assumed that groundwater would be the source of construction water for these projects and would be available during all water year types for the reasons described above in Appendix F. The overall use of groundwater for construction of all approved and pending cumulative projects at a cumulative rate of 0.158 AFY/acre would be consistent with the Subbasin's long-term sustainable yield of 0.6 AFY/acre.

Operational water supplies for each solar project would mainly be used for panel washing. Operational water demands for VCIP solar and energy storage projects are estimated to be approximately 0.004 AFY per acre. As discussed, it is anticipated that the source operational water for the VCIP solar and energy storage projects on District-owned would be M&I CVP contract water supplies from the District as provided under Article 19 the District's Rules and Regulations. Groundwater supplies would also be available through District-approved transfers. For potential VCIP projects located on privately-owned lands, operational water supplies would be provided by the underlying landowner from its surface and/or groundwater allocations. If the District cannot provide the surface water supply from its CVP contract, operational water would be obtained from existing on-site agricultural wells or from surface water transferred into the District. Since the specific mix of groundwater and surface water supply for each project cannot be predicted, it is conservatively assumed that all operational water supplies for energy projects on private lands would be obtained from groundwater. Based on the 64,000 acres of private lands in the VCIP DFAs, the total groundwater demand for project operations would be 256 AFY. These operational water demands would be well below the 39,000 AFY allocation (at 0.6 AFY per acre) for those 64,000 acres of privately owned land and therefore would be consistent with the estimated Subbasin's sustainable yield.

Of the 11 approved and pending solar and energy storage projects in the Subbasin that are not part of the proposed VCIP, three projects are on current or former District-owned lands and would utilize the same operational supplies as potential VCIP projects located on District-owned lands as described above. The remaining eight projects are on private lands and would utilize a combination of surface and groundwater depending on arrangements with the underlying landowners. As provided above and in Appendix F, there are sufficient groundwater supplies to meet the operational demands of these eight projects. Estimates of operational water use were available for two of the projects and these were much lower than 0.004 AFY/acre. To be conservative, it was assumed that all eight projects on private lands would have operational water demands of 0.004 AFY/acre over a cumulative total land area of 4,914 acres, for a cumulative operational water demand of 20 AFY.

As discussed above in Impact UTS-2, under "Reasonably Foreseeable Future Uses," other non-VCIP projects would rely on a groundwater or surface water for operations depending on the circumstances of each case. The six non-VCIP/non-energy projects that are approved or pending approval in the Subbasin include three pistachio processing plants, two highway commercial developments, and one utility substation (Manning Substation). One pistachio plant will utilize only surface water provided by the District. The other two plants (on a combined land area of 493 acres) will utilize groundwater pursuant to agreements with the District, which will ensure groundwater pumping complies with the allocations established in the GSP. The total groundwater use by the pistachio plants is estimated to be 1,212 AFY. The two highway commercial projects will receive M&I water from

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the District's surface water deliveries and thus would not affect the Subbasin. The Manning Substation would require no water supply for operations.

The total operational groundwater demand from the cumulative projects would be the sum of VCIP projects (256 AFY), non-VCIP solar and energy storage projects (20 AFY), and other non-VCIP projects in the Subbasin (1,212 AFY), for a cumulative total of 1,488 AFY, over a cumulative land area of 147,019 acres. This represents a cumulative pumping rate of 0.01 AFY/acre which is substantially below the long-term groundwater allocation of 0.6 AFY/acre.

In summary, for cumulative projects that would rely on groundwater for operational needs, the collective water demands would be substantially below the GSA's long-term groundwater allocation of 0.6 AFY per acre and would therefore promote sustainable groundwater management. Thus, the cumulative projects would not deplete groundwater supplies, interfere with groundwater recharge, or conflict with or obstruct implementation of the GSP. Therefore, *the cumulative impact to water supply would be less than significant, and the contribution from VCIP energy and infrastructure projects would not be cumulatively considerable.*

Notably, cumulative projects in the City of Lemoore are in a different groundwater subbasin (the Tulare Lake Subbasin) and therefore those water demands would not combine with water demands within the Subbasin, and thus would not contribute to any cumulative water supply impact associated with the VCIP (DWR 2022).

With respect to wastewater treatment, most of the cumulative projects, including the VCIP solar and energy storage projects, would include septic and leachfield systems for on-site disposal and treatment of domestic wastewater. These wastewater facilities would be subject to Fresno and Kings Counties' design and engineering requirements for septic systems, which would be tailored to each project's soil and groundwater conditions. None of the cumulative projects in unincorporated areas of Fresno and Kings Counties would connect to an existing wastewater treatment system. The cumulative projects within the City of Lemoore have all been approved for development and the Lemoore wastewater treatment facility has sufficient capacity to accommodate the wastewater generated by these projects. Therefore, *the cumulative impacts with respect to wastewater treatment would be less than significant, and the contribution from VCIP energy and infrastructure projects would not be cumulatively considerable.*

With respect to stormwater drainage, neither the VCIP solar and energy storage projects nor any of the cumulative projects in the unincorporated areas of Fresno and Kings Counties would include or require the construction or expansion of stormwater drainage facilities beyond very limited grading for internal surface drainage control. The cumulative projects in the City of Lemoore include storm drains that would connect to the City's storm drainage system. These storm drainage improvements are subject to environmental and engineering design review by the City of Lemoore, which will ensure that the improvements would not result in significant environmental impacts. Therefore, *no cumulative impacts would result from the construction or expansion of storm drainage systems, and the implementation of the VCIP Energy Resource and Infrastructure Plans would make no contribution to any such cumulative impacts.*

Regarding solid waste, there would be sufficient capacity at local landfill facilities to accommodate the solid waste generated by VCIP energy and infrastructure projects during the construction, operations, and decommissioning phases. As discussed under Impact UTS-4, it is estimated that the total lifetime generation of non-recyclable solid waste by VCIP projects would be equivalent to 3.3 percent of the remaining capacity of

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the American Avenue Landfill. It is roughly estimated that the other cumulative projects in Fresno County would generate lifetime solid waste volumes equivalent to approximately 1.0 percent of the remaining landfill capacity in Fresno County. While the cumulative projects in Kings County would utilize the Waste Management Landfill in Kettleman Hills, it is estimated that the cumulative projects in Kings County, including Lemoore, would generate the equivalent of approximately 0.2 percent of the remaining capacity at that landfill facility. Therefore, the cumulative projects, including the VCIP energy and infrastructure projects, would not generate solid waste exceeding local landfill capacity. All solid waste generated by the cumulative projects would be recycled, treated, and disposed of in compliance with federal, state, and local laws. As such, there would be no cumulative impact in terms of compliance with applicable laws and regulations related to the management and reduction of solid waste. In summary, the cumulative impact with respect to solid waste disposal and landfill capacity would be *less than significant*, and the *contribution from VCIP energy and infrastructure projects would not be cumulatively considerable*.

Regarding other utilities, the construction, operation, and decommissioning of the VCIP energy and infrastructure projects would utilize no natural gas and minimal electric power. The installation of telecommunications systems at the solar and energy storage sites would have little or no impact. Therefore, the cumulative impact with respect to natural gas and electric power would be *less than significant*, and the *contribution from potential VCIP energy and infrastructure projects would not be cumulatively considerable*.

The outside transmission lines would have little or no impact on utilities and service systems, as discussed under Section 4.17.3.2., above. As such, the contribution to cumulative impacts would not be cumulatively considerable, and the cumulative impact associated with the outside transmission lines would be *less than significant*.

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4.18. WILDFIRE

This section includes the following discussion and analysis related to wildfire: existing environmental and regulatory setting; criteria and methodology for evaluating impacts; and the results of the impact assessment, including the identification of potentially significant impacts and corresponding mitigation measures to avoid or substantially lessen such impacts to the extent feasible, as appropriate.

PEIR Scoping Comments

During the PEIR scoping process, the District received two letters containing comments related to fire hazards, which summarized below (see PEIR Scoping Report in Appendix A of this document).

Leadership Counsel for Justice and Accountability

The comment letter states that installation of solar, energy transmission, and energy storage facilities carry the risk of fire hazard and requests thorough analysis of these impacts. The comment letter requests a discussion of how the implementation of the VCIP will comply with: the California Fire Code (24 C.C.R. § 9), the California Strategic Fire Plan, Sections 13000 et seq. of the California Health and Services Code, the Fresno County's General Plan, Fresno County's Emergency Operation Plans, and the Fresno County's Disaster Preparedness Plan, and other pertinent and applicable national, state, and local rules and guidelines. The comment letter states the VCIP should include appropriate mitigation measures to reduce fire hazard risks, such as an evacuation plan, emergency preparedness plan, emergency utility shut-offs, strategic buffer zones, fuel management, and educational information. The letter also states the PEIR must also evaluate to ensure local services such as fire, medical, and police are sufficiently available to serve the VCIP project sites, and at its proposed scale.

Fresno County Fire Protection District (FCFPD)

The comments from FCFPD are contained in a letter that refers extensively to Resolution 2025-02 adopted by the FCFPD Board of Directors (attached to the comment letter). The comment letter states: "As set forth in Resolution 2025-02, the FCFPD has determined that there is both a direct impact and cumulative impact on emergency response capabilities of the FCFPD to respond to fire, rescue, and medical services emergencies posed by the operation of: 1) solar photovoltaic (PV) generating facilities, and 2) stand-alone energy storage facilities ("PV projects"). The comment letter requests that the PEIR require the project proponent(s) to enter into a Fire Services Agreement with FCFPD consistent with Resolution 2025-02. According to FCFPD Resolution 2025-02, due to a state-mandated property tax exclusion for new solar facilities, the solar PV projects would not provide additional property tax revenues that would support FCFPD fire, rescue and medical emergency services to the solar PV projects. According to FCFPD, this property tax exclusion for new solar facilities creates a need for fire services agreements between solar developers and FCFPD.¹

[Note: The laws, regulations, codes, and policies pertaining to fire hazard and wildfire are described in Section 4.18.2. *Regulatory Context*. Potential fire hazards associated with VCIP implementation are addressed in Section 4.18.3. *Environmental Impact Analysis* under Impact WF-1. Potential impacts associated with fire, police and emergency services are addressed in Section 4.15. *Public Services*.]

¹ In response, it is noted that the referenced property tax exclusion is due to sunset at the end of 2026. Thus, it is highly likely that VCIP solar facilities will be fully subject to property tax. This increased tax revenue would be substantial for each solar/BESS project and may be sufficient to cover the cost of increased fire protection service that FCFPD anticipates. {AM0012.1}

4.18.1. Environmental Setting

Background

Wildland fires resulting from either natural or manmade causes occur in forests, brush, grasslands, fallow agricultural areas, and vacant lots. Such fires can cause widespread damage to range and forest lands, in addition to threatening the lives and personal property of persons residing in wildfire-prone areas. The type and quantity of fuels, topography, and climate are the primary factors influencing the degree of fire risk. Wildfires can also exacerbate air quality problems, particularly during the summer months when ambient air quality is already low. Structural fires generally result from manmade causes and can easily spread through densely settled urban areas, causing large-scale loss of personal property, personal injury, and, occasionally, fatalities.

Wildland fire protection in California is the responsibility of either the state or local government, depending on location, and wildland fire on federal property is the responsibility of the federal government. Lands within the State Responsibility Area (SRA) typically include upland forested areas (that are not otherwise within the Federal Responsibility Area (FRA)), where the State of California has primary responsibility for the prevention and suppression of wildland fires. The SRA encompasses over 31 million acres where the California Department of Forestry and Fire Protection (CAL FIRE) provides a basic level of wildland fire prevention and protection services. CAL FIRE's mapping of Fire Hazard Severity Zones (FHSZ) for the SRA shows three levels of hazard severity including "Moderate," "High" and "Very High" (CAL FIRE 2024c).

Local responsibility areas (LRAs) include incorporated cities, lowland areas of unincorporated counties, and portions of the desert. LRA fire protection is typically provided by city and county fire departments, fire protection districts, and CAL FIRE under contract to local government. The Fresno County Fire Protection District (FCFPD) has primary responsibility for responding to fires in the VCIP Plan Area. CAL FIRE also evaluates Fire Hazard Severity in LRAs, but the mapping shows only those areas with "Very High Fire Hazard" based on potential of fire spread from adjacent wildlands and from flammable vegetation in the LRA.

For a full description of fire and emergency response agencies, see Section 4.14. *Public Services*.

Wildfire Setting

Most of the VCIP Plan Area is on the floor of San Joaquin Valley and consists largely of agricultural land with several small rural communities, dispersed ranch complexes, individual dwellings, agricultural processing facilities, agricultural equipment storage sites, freeway commercial centers, government institutions, solar generating facilities, and other land uses. The agricultural land cover consists variously of row and tree crops, fallow or plowed fields depending on the season, and grazing land. Other vegetation includes landscape tree and shrub species clustered around the rural communities, ranch complexes, and individual dwellings. A narrow portion of the Plan Area located west of I-5 consists of farmland along the base of the foothills of the Diablo Range. Some Plan Area lands located near its western boundary are uncultivated lands covered by annual grasses.

Historical fire mapping of Fresno County indicates the foothill area has historically been subject to several wildfires while there have been no wildfires in the Plan Area east of I-5 since at least 1900, with the exception

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of a few small areas where wildfires in the foothills jumped a short distance over to the east side of the freeway (CAL FIRE 2025b, Fresno County 2023b).

The valley portion of the Plan Area located east of I-5 is entirely within the LRA. The most recent FHSZ mapping by CAL FIRE shows most of the LRA portion of the Plan Area as “unzoned” for wildfire hazard, with several small areas along the east side of I-5 in the Plan Area zoned as High or Moderate Fire Hazard. In addition, there are several small areas of Moderate Fire Hazard dispersed in the southwest corner of the Plan Area near Coalinga. No areas within the LRA portion of the Plan Area are zone Very High Fire Hazard (CAL FIRE 2025a).

Most of the Plan Area located west of I-5 is in the SRA where the lands adjacent to the freeway are zoned Moderate Fire Hazard and the lands farther west toward the Plan Area boundary are zoned High Fire Hazard. SRA lands comprise approximately 26,000 acres of the Plan Area, of which approximately 18,000 acres are in cultivation and about 8,000 acres are uncultivated lands covered with annual grasses. Development Focus Areas (DFA) lands comprise about 2,240 acres of the SRA area with the Plan Area. All of these DFA lands are zoned Moderate Fire Hazard, and no DFA lands are zoned High Fire Hazard. There are no lands in the Plan Area portion of the SRA that are zoned Very High Fire Hazard (CAL FIRE 2024c). (See Section 4.18.2. *Regulatory Context* below for additional description of CAL FIRE.)

Factors Contributing to Wildfire

The intensity and extent of wildfires primarily depends on fuels (e.g., vegetation), topography (e.g., slope, elevation, and aspect), and weather/climate (e.g., wind, temperature, and humidity over short and long-term periods). Combinations of these three factors influence the spread of a wildfire once ignited.

Vegetation/Fuels

Vegetation is the fuel that feeds a fire and is a key factor in wildfire behavior. Fuel sources typically include dead and live trees, downed branches, leaf litter, and dried vegetation. Additionally, weather and climate conditions, such as drought, can lead to increasingly dry vegetation with low moisture content, increasing its flammability. Fuel types within the Plan Area include annual grasses and brush in the foothills west of I-5 and seasonal grasses, fallow land, tree crops, and dispersed trees and shrubs on the valley floor. For additional description of vegetation types within the Plan Area, see Section 4.4. *Biological Resources*.

Topography

Topographic features can strongly influence fire behavior and can determine how fast a fire moves through an area. Fire typically moves more quickly uphill, compared to either downhill or on flat terrain. As heat rises in front of the fire, it more effectively preheats and dries upslope fuels, providing for more rapid combustion. Following severe wildfires, sloping land is also more susceptible to landslide or flooding from increased runoff during substantial precipitation events. Aspect is the direction that a slope faces, and it determines how much radiated heat the slope will receive from the sun. Slopes facing south to southwest will receive the most solar radiation.

The Plan Area consists of two topographic regions, including: 1) the broad, flat valley floor area east of I-5 that generally slopes from the southwest to the northeast; 2) the gently rising terrain along base of the foothills to the west which reach an elevation of approximately 900 feet at the northwest edge of the Plan Area.

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Weather/Climate

Wind, temperature, and relative humidity are influential factors in fire behavior and susceptibility. Fire moves faster under hot, dry, and windy conditions compared with cool, wet, calm conditions. Wind may also blow burning embers ahead of a fire into vegetation, causing its spread. Drought conditions also lead to extended periods of excessively dry vegetation, increasing the fuel load and ignition potential.

The climate in the Plan Area is characteristic of the southern San Joaquin Valley, which experiences long, hot, and dry summers and short and mild winters. Precipitation occurs in the winter months and is typical of semi-arid climate with annual rainfall averaging 6-inches in the southern Plan Area and 8-inches in the north.

Impacts of Wildfire on Air Quality

As wildfires burn vegetation, large amounts of carbon dioxide, black carbon (a component of fine particulate matter [PM 2.5]), brown carbon (smoke), and ozone precursors are released into the atmosphere. Wildfires also emit a substantial amount of volatile and semi-volatile organic materials and nitrogen oxides that form ozone and organic particulate matter. These emissions can lead to harmful exposures for first responders, nearby residents, and in populations farther from the wildfires. Exposure to these pollutants can cause asthma attacks, coughing, and shortness of breath. These pollutants and their health effects are described in more detail in Section 4.3. *Air Quality*.

4.18.2. Regulatory Context***Federal*****North American Electric Reliability Corporation (NERC) Standards**

The NERC is a nonprofit corporation comprising 10 regional reliability councils, including the Western Electricity Coordinating Council (WECC). To achieve its reliability goal, NERC develops and enforces reliability standards, monitors the bulk power systems, and educates, trains, and certifies industry personnel. To improve the reliability of regional electric transmission systems, NERC developed Standard FAC-003, a transmission vegetation management program including requirements for clearances between vegetation and any overhead, ungrounded supply conductors, while taking into consideration transmission line voltage, the effects of ambient temperature on conductor sag under maximum design loading, fire risk, line terrain and elevation, and the effects of wind velocities on conductor sway. The clearances identified must be no less than those set forth in the Institute of Electrical and Electronics Engineers (IEEE) Standard 516-2003 (*Guide for Maintenance Methods on Energized Power Lines*), which establishes minimum vegetation-to-conductor clearances to maintain electrical integrity of the electrical system (see next item).

National Electric Safety Code (NESC)

The NESC is a national standard for the safe installation, operation, and maintenance of electric power and communication utility systems including power substations, power and communication overhead lines, and power and communication underground lines. Published by the IEEE, the NESC dictates the minimum distance between the phase conductors of the transmission line and the minimum distance between the energized conductors and the ground or to a building or structure. The NESC is used to determine the width of the

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transmission line right-of-way (ROW), to ensure that the energized line will not contact structures built outside of the ROW. The NESC is also used to specify a minimum distance to the ground, to prevent vehicles that drive beneath the line from contacting the conductors.

National Electrical Code (NEC)

The NEC, published by the National Fire Protection Association (NFPA), is a widely adopted model code for the installation of electrical components and systems. Its purpose is to safeguard persons and property from hazards arising from the use of electricity. Article 480 of the NEC identifies insulation and venting requirements for stationary storage batteries for the purpose of reducing potential fire risk.

Western Area Power Administration (WAPA)

All transmission facilities constructed and operated by WAPA are subject to the Health and Safety provisions of WAPA's Construction Standards, specifically Section 1.4.1-1.5) which requires the contractor to provide "Fire protection procedures and facilities, including requirements in OSHA 1926, Subpart F, 'Fire Protection and Prevention,'" which requires the development of a fire protection program. Examples of fire prevention measures include requiring all machinery to be equipped with spark arresters and avoiding any activity that could emit a spark or high heat during very dry and hot conditions, such as those that prompt a Red Flag Warning or Fire Weather Watch advisory by the National Weather Service.

State

California Department of Forestry and Fire Protection (CAL FIRE)

The mission of CAL FIRE is to protect the people of California from fires and to promote healthy forests. In 2023, CAL FIRE's firefighters, fire engines, and aircraft responded to 7,386 wildland fires on 332,822 acres (CAL FIRE 2024b). The Office of the State Fire Marshal supports CAL FIRE's mission to protect life and property through fire prevention engineering programs, law and code enforcement, and education. CAL FIRE provides direction for fire prevention and enforcement within the SRA using fire resource assessments, a variety of available data, mapping, and other tools. Pre-fire management activities, including prescribed burning, fuel breaks, forest health treatments, and removal of hazardous vegetation, are conducted at the unit level under the guidance of CAL FIRE program managers.

CAL FIRE's responsibilities include maintaining FHSZ data and maps for the entire state. There are three classes of fire hazard severity ratings within FHSZs: Moderate, High, and Very High. Fire hazard severity considers vegetation amount, topography, and weather (temperature, humidity and wind), and represents the likelihood of an area burning over a 30- to 50-year time period. The mapping for each county includes separate maps for LRAs, where local fire departments have primary responsibility, and the SRA where CAL FIRE has primary responsibility. These zones were defined for the purpose of identifying measures to be taken to reduce the rate of spreading and the potential intensity of uncontrolled fires that threaten to destroy resources, life, or property. As mentioned above, the valley portion of the Plan Area located east of I-5 is entirely within the LRA, while most of the Plan Area west of I-5 is within the SRA. The FHSZ mapping by CAL FIRE shows most of the LRA portion of the Plan Area as "unzoned" for wildfire hazard, indicating low wildfire hazard. In addition, there are several small areas of Moderate Fire Hazard dispersed in the southwest corner of the Plan Area near Coalinga, (CAL FIRE 2025b). The SRA portions of the Plan Area immediately west of I-5 are zoned Moderate Fire Hazard and the lands farther west in the lower foothills are zoned High Fire Hazard (CAL FIRE 2024c).

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2024 Strategic Fire Plan for California

Developed by the Board of Forestry and Fire Protection, the Strategic Fire Plan outlines goals and objectives to implement CAL FIRE's policies and vision. The 2024 Strategic Fire Plan reflects CAL FIRE's focus on: 1) improving its core capabilities; 2) enhancing their internal operations; 3) ensuring health and safety; and 4) building an engaged, motivated and innovative workforce. CAL FIRE is divided into 21 operating units, generally composed of counties or combination of counties, each of which prepares an annual Unit Fire Plan for its unit. The VCIP Plan Area is located in the Fresno-Kings Operational Unit (CAL FIRE 2024e).

California Emergency Response Plan

Pursuant to the Emergency Services Act (Gov. Code section 8550 et seq.), California has developed an Emergency Plan to coordinate emergency services provided by federal, state, and local governmental agencies and private persons. Under this act, the duly proclaimed existence of conditions of disaster or of extreme peril to the safety of persons and property caused by fire may constitute a "state of emergency" addressed pursuant to the state Emergency Plan. (Gov. Code, sections 8558, 8560.) The State Emergency Plan is administered by the State Office of Emergency Services (OES). The OES coordinates the responses of other agencies, including CAL FIRE as well as the U.S. Environmental Protection Agency (U.S. EPA), California Highway Patrol (CHP), California Department of Fish and Wildlife (CDFW), the nine Regional Water Quality Control Boards (RWQCBs) (including, as relevant to the VCIP, the Central Valley RWQCB), the local air districts (including the San Joaquin Valley Air Pollution Control District) and local agencies. The State Emergency Plan defines the "policies, concepts, and general protocols" for proper implementation of the California Standardized Emergency Management System (SEMS). The SEMS is an emergency management protocol that agencies within the State of California must follow during multi-agency response efforts whenever state agencies are involved.

Public Resources Code

The California Public Resources Code (PRC) includes fire safety provisions that apply to State Responsibility Areas during the time of year designated as having hazardous fire conditions. During the fire hazard season, these regulations restrict the use of equipment that may produce a spark, flame, or fire; require the use of spark arresters on equipment that has an internal combustion engine; specify requirements for the safe use of gasoline-powered tools in fire hazard areas; and specify fire-suppression equipment that must be provided on-site for various types of work in fire-prone areas.

PRC sections 4292 and 4293 require that any person who owns, controls, operates, or maintains any electrical transmission or distribution line must maintain a 10-foot firebreak clearing around and adjacent to any pole, tower, and conductors that carry electric current.

California Fire Code

Similar to the International Fire Code (IFC), the California Fire Code (Fire Code) and the California Building Code (CBC) use a hazards classification system to determine the appropriate measures to protect life and property. The Fire Code includes regulations regarding fire-resistance-rated construction, fire protection systems such as alarm and sprinkler systems, fire services features such as fire apparatus access roads, means of egress, fire safety during construction and demolition, and wildland-urban interface areas. Fire Code Section 4906 contains regulations for vegetation and fuel management to maintain clearances around structures. These {AM0012.1}

requirements establish minimum standards to protect buildings located in FHSZs within the SRA. Section 608 of the IFC has been adopted by the State of California and Fresno County to minimize risk of fire from stationary battery storage systems and to contain fire in the event of such an incident. Fresno County has adopted the Fire Code in its Ordinance Code as part of its building and construction regulations.

California Code of Regulations Title 14 – Fire Safe Roads

The Board of Forestry maintains fire safe road regulations, as part of the California Code of Regulations (CCR), Title 14. This includes requirements for road width, surface treatments, grade, radius, turnarounds, turnouts, structures, driveways, and gate entrances. These regulations are intended to ensure safe access for emergency wildland fire equipment and civilian evacuation.

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. Pursuant to CCR, Title 8, Section 1920, Cal/OSHA requires employers to be responsible for the development of a fire protection program to be followed throughout all phases of the construction work, including the provision of firefighting equipment as specified.

California Public Utilities Commission (CPUC)

The CPUC, which has regulatory authority over Investor-Owned Utilities (IOUs) such as PG&E and Southern California Edison (SCE), promulgates General Orders governing the construction and operation of facilities under its jurisdiction. General Order 95 applies to construction and reconstruction of overhead electrical lines including transmission lines. Various rules under General Order 95 pertain to fire safety including the rules requiring the establishment and maintenance of minimum clearances from vegetation and other wires. Enhanced requirements apply in High Fire Threat Districts (HFTDs) as mapped in the CPUC Fire-Threat District Map. No portion of the VCIP Plan Area is mapped as an HFTD on CPUC's Fire-Threat District Map (CPUC 2021).

General Order 166, Standard 1.E requires that IOUs develop a Fire Prevention Plan which describes measures that the electric utility will implement to mitigate the threat of power-line fires generally. Additionally, this standard requires that IOUs outline a plan to mitigate power line fires when wind conditions exceed the structural design standards of the line during a Red Flag Warning in a high fire threat area.

Senate Bill 1028

Senate Bill 1028 (2016) requires each electrical corporation to construct, maintain, and operate its electrical lines and equipment in a manner that will minimize the risk of catastrophic wildfire posed by those electrical lines and equipment, and makes a violation of these provisions by an electrical corporation a crime under state law. The bill also requires each electrical corporation to annually prepare a wildfire mitigation plan and submit it to the CPUC for review. The plan must include a statement of objectives, a description of preventive strategies and programs that are focused on minimizing risk associated with electric facilities, and a description of the metrics that the electric corporation uses to evaluate the overall wildfire mitigation plan performance and assumptions that underlie the use of the metrics. PG&E and SCE have developed Fire Prevention Plans in response to the requirements of SB 1028.

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Senate Bill 901

Senate Bill 901 (2018) expanded upon the wildfire mitigation plan requirements of Senate Bill 1028 and included a number of provisions related to wildfire risk and management in California including, but not limited to, the following: budget adjustments related to emergency response and readiness, the creation of a CAL FIRE Wildfire Resilience Program, and increasing the maximum penalties that can be issued by the CPUC to a public utility that fails to comply with CPUC requirements. Additionally, the legislation requires that utilities prepare wildfire mitigation plans that include elements specified in the bill such as the following: 1) a description of the preventive strategies and programs to be adopted by the electrical corporation to minimize the risk of its electrical lines and equipment causing catastrophic wildfires, including consideration of dynamic climate change risks; 2) protocols for de-energizing portions of the electrical distribution system that consider the associated impacts on public safety, as well as protocols related to mitigating the public safety impacts of those protocols, including impacts on critical first responders and on health and communication infrastructure; and 3) particular risks and risk drivers associated with topographic and climatological risk factors throughout the different parts of the electrical corporation's service territory. These wildfire mitigation plans are required to be reviewed by an independent evaluator. PG&E and SCE have developed Wildfire Mitigation Plans in response to the requirements of SB 901.

Fresno County**Fresno County General Plan**

The Health and Safety Element of the Fresno County General Plan (Fresno County 2024b) contains the following goal and policies that may be relevant to wildfire:

B. Fire Hazards

GOAL HS-B: To minimize the risk of loss of life, injury, and damage to property and natural resources resulting from fire hazards.

Policy HS-B.1 Fire Hazards Review

The County shall review project proposals to identify potential fire hazards and to evaluate the effectiveness of preventive measures to reduce the risk to life and property.

Policy HS-B.7 Fire and Emergency Vehicle Access

The County shall require new discretionary development projects to have adequate access for fire and emergency vehicles and equipment. All major subdivisions shall have a minimum of two (2) points of ingress and egress. The County shall implement feasible recommendations in AB2911 Office of the State Fire Marshall Subdivision Survey Reports, which survey subdivisions without a secondary means of egress routes for evacuation and other fire safety factors.

Policy HS-B.10 Fire Agency Review of Development Proposals

The County shall refer development proposals in the Very High Fire Hazard Severity Zones and State Responsibility Areas of the unincorporated county to the appropriate local fire agencies for review of compliance with fire safety standards. If dual

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responsibility exists, both agencies shall review and comment relative to their area of responsibility. If standards are different or conflicting, the more stringent standards shall apply.

Policy HS-B.15**Fire Protection**

The County shall ensure that any new development will have adequate fire protection, including proximity to adequate emergency services, adequate provisions for fire flow and emergency vehicle access and fire hardened communication, including high speed internet service.

Fresno County Multi-Jurisdictional Hazard Mitigation Plan

Adopted in May 2024, Fresno County's Multi-Jurisdictional Hazard Mitigation Plan is intended to reduce or eliminate long-term risks to people and property from hazards such as floods, wildfire, severe weather, and drought. The plan includes goals and objectives that are consistent with the County's general plan goals and policies related to reducing wildfire hazards (Fresno County 2024e).

Fresno County Master Emergency Services Plan

In October 2017, Fresno County Office of Emergency Services (OES) prepared the updated Master Emergency Services Plan to serve as a guide for response to an emergency or disaster in the unincorporated areas of the County, and to coordinate and assist with the disaster response in jurisdictions both within and outside of the County. The plan outlines a general structure for emergency responders in the event of an emergency in the County and does not establish any specific evacuation routes or plans, standards, goals, or policies (Fresno County 2017d).

Fresno-Kings Unit Strategic Fire Plan

The VCIP Plan Area is located within the Fresno-Kings Operational Unit and would follow goals and objectives outlined within the Fresno-Kings Unit Strategic Fire Plan, which was completed by a collaborative effort with various stakeholders in the Unit, program managers, bureau managers, and battalion chiefs. The Unit's Fire Plan is updated each year based on accomplishments, goals, and objectives outlined by the Unit and the California Strategic Fire Plan. The Unit's Fire Plan is executed through a continued working relationship with CAL FIRE and the FCFPD and is divided into battalions. The VCIP Plan Area is located within the jurisdictional areas of Battalions 14 and 15, which cover the central and western area of the FCFPD in the Fresno-Kings Unit, and together comprise 1,446,013 acres of LRA and SRA (CAL FIRE 2024a).

Fresno County Fire Code

The County Ordinance Code, at Section 15.10.010, adopts and incorporates by reference the Fire Code, contained in the 2022 Edition of the CBC, as the Fresno County Fire Code, which is applicable to all building construction requiring permits from Fresno County (Fresno County 2024i).

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4.18.3. Environmental Impact Analysis

METHODOLOGY

This section analyzes the potential for implementation of the VCIP to result in significant environmental impacts related to wildfire. The following evaluation is based on detailed review of CAL FIRE's fire hazard severity mapping, historical fire mapping, and relevant regulations, codes, and plans, as well as terrain, fuel, and climate characteristics, and the characteristics of potential VCIP projects.

SIGNIFICANCE CRITERIA

Based on Appendix G of the state CEQA Guidelines, section IX(g), the project would be considered to result in a significant impact related to wildfire if it would:

- a. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.

Additionally, based on CEQA Guidelines, Appendix G, section XX, the project, if located in or near the SRA or lands classified as very high fire hazard severity zones, would result in a significant impact related to wildfire if it would:

- b. Substantially impair an adopted emergency response plan or emergency evacuation plan.
- c. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.
- d. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment.
- e. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

4.18.3.1. DIRECT AND INDIRECT EFFECTS

Introduction – Wildfire Hazard Zones

The mapping of FHSZs prepared by CAL FIRE for Fresno County shows all of the Plan Area lying east of I-5 as being within a LRA. This constitutes the vast majority (95 percent) of the Plan Area. Of the small portion of the Plan Area located west of I-5, most is within CAL FIRE's SRA. In total, the lands within the SRA represent approximately five percent of lands within the Plan Area. Lands within the SRA include only approximately two percent of the potential DFA lands, all of which are designated Moderate Fire Hazard. The nearest area within the SRA that is zoned as Very High Fire Hazard on the FHSZ map is located in the Little Panoche Creek watershed at the western edge of Fresno County, approximately 5 miles west of the Plan Area (CAL FIRE 2024c).

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The FHSZ mapping by CAL FIRE shows most of the LRA portion of the Plan Area as “unzoned” for wildfire hazard, indicating low wildfire hazard. There are several small areas of Moderate Fire Hazard in the southwest corner of the Plan Area near Coalinga. No VCIP DFAs or infrastructure sites or corridors are within the Very High Fire Hazard zone (CAL FIRE 2024d).

Impact WF-1. Risk of Wildfire and Related Effects

Implementation of the VCIP Energy Resource and Infrastructure Plans would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires. Compliance with all applicable regulations, codes, standards, and required fire safety measures during construction, operation, and decommissioning of VCIP clean energy and infrastructure projects, would provide a high degree of protection from wildfire risk. (*Less-than-significant Impact*)

As noted above, approximately 95 percent of the VCIP Plan Area is outside the SRA, and no DFAs or infrastructure sites or corridors are zoned Very High Fire Hazard. Within the small portion of the Plan Area located in the SRA, all 2,240 acres of potential DFAs are in the Moderate Fire Hazard zone. The VCIP Plan Area has a relatively low potential for wildfires under existing conditions. Potential VCIP projects would introduce new elements that could pose a risk for grass fires during the construction, operational, and decommissioning phases.

Construction of the solar facilities, battery storage systems, substations, and gen-tie and transmission 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 sparks from vehicles and equipment off roadways where dry vegetation could be ignited. Welding activities also have the potential to result in the combustion of brush and vegetation.

As discussed in Chapter 2. *Project Description*, construction workers would receive training in fire safety and suppression to prevent fire and respond effectively if fire breaks out. During construction of VCIP facilities, water trucks used for dust suppression would be available for suppression of small fires.

During solar facility operation, equipment such as transformers, inverters, and substation equipment would involve the use of oils (e.g., dialectic or mineral oils and lubricants) and fuels, which would pose fire hazards. The planned battery storage systems would likely include lithium-ion batteries which are highly combustible. Maintenance vehicles and panel washing trucks would travel among the solar arrays where low vegetation would be dry in summer and combustible. Smoking by operational personnel would also pose a fire hazard.

To minimize fire hazard, the typical solar project would include design and operational measures for fire prevention and suppression. For projects subject to compliance with Fresno County building ordinances, design measures 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 to minimize the potential for grass fires. VCIP projects would be constructed in accordance with applicable state and local standards. For example, to the extent applicable to a particular project, the Fresno County Fire Code would require fireproofing and protection for all equipment. Solar panels would be manufactured from fire-resistant materials, and the associated electrical equipment would be enclosed in fire-resistant material. Electrical equipment such as transformers and inverters would be placed on concrete {AM0012.1}

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. 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 (CO₂) fire extinguishers would be mounted at the inverter/transformer pads throughout the project. Employees would be required to be familiar with the use of fire safety equipment, and smoking would be permitted only in designated areas. Each project would be required to prepare and implement a Fire Protection Plan as required by Cal/OSHA.

The energy storage systems would consist of prefabricated electrical enclosures containing battery banks and associated switchboards, inverters, and transformers. All battery containers would be installed on concrete foundations. It is anticipated that a typical solar/BESS facility would include approximately 250 prefabricated enclosures. The enclosures would have appropriate fire suppression systems built to code. Each energy storage unit used on site would be designed in compliance with section 608 of the IFC, which has been adopted by the State of California to minimize risk of fire from stationary storage battery systems and contain fire in the event of such an incident. Under California law, the battery enclosures also must comply with Article 480 of the Electrical Code, which requires appropriate insulation and venting requirements for these types of systems, further preventing risk of fire from the battery enclosures. The battery storage facilities would be equipped with fire suppression systems, smoke detectors, and emergency stops. For a detailed discussion of fire safety issues related to BESS, see Section 4.9. *Hazards and Hazardous Materials*, under Impact HAZ-2. As discussed in that section, the regulatory framework to ensure BESS safety and emergency response has advanced significantly in recent years, so that it can be concluded that the implementation of existing laws, codes, standards, and industry-standard practices at the project level, as required by Mitigation Measure HAZ-1, would avoid or reduce to a less-than-significant level the potential health, safety, and environmental hazards associated with BESS operation.

The VCIP solar and energy storage facilities would be designed consistent with Fresno County Fire Code, under which the regulations of the National Fire Protection Association and the American Insurance Association are applied. Where Fresno County building permits are required, the FCFPD's Fire Prevention/Fire Code Enforcement Bureau would review the construction plans for each VCIP project to ensure compliance with all code requirements and standards, including minimum requirements for emergency vehicle access and fire breaks.

Upon completion of each solar and energy storage facility, the exposed soils beneath and around the solar arrays would be revegetated to prevent erosion and dust generation, and also to protect on-site soils for future reclamation upon decommissioning. The exposed areas would be planted with an approved seed mix containing only "low water use" and low-growing plant species. The vegetative cover would be kept low through mechanical means (or sheep grazing) which would reduce fuel load buildup and reduce the potential hazard from grass fires. For each VCIP solar and BESS project, a Vegetation and Soil Management Plan (VSMP) would be required as specified in Mitigation Measure AG-1a. Protection of Long-Term Agricultural Land Capability. The preparation and implementation of the VSMP throughout the operational life of the solar/BESS facilities would ensure that onsite vegetation would be installed and maintained in a manner that would minimize fire hazard.

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The gen-ties and transmission lines would present potential fire ignition sources. However, design and construction of transmission facilities are subject to NESC standards. Transmission lines are designed to withstand strong winds (thus tower or conductor failures are highly unlikely) and vegetation clearance requirements under NERC Standard FAC-003 and its California equivalents would provide for vertical and horizontal separation of towers and lines from existing vegetation and crops (e.g., orchard trees) as a potential ignition source. In addition, transmission lines would be subject to utility Fire Prevention Plans and Wildfire Mitigation Plans prepared pursuant to state law. Also, subsequent environmental documents prepared at the project-specific level, particularly on transmission projects planned for high fire hazard areas such as remote woodland areas subject to high winds, would refer to the Attorney General's Guidance Document "Best Practices for Analyzing and Mitigating Wildfire Impacts of Development Projects under CEQA" (OAG 2022).

Each VCIP project would include setbacks and buffers consistent with the Fresno County Solar Facility Guidelines. Additional separation within and between clean energy projects would be provided by the existing networks of canals, roadways, and farm roads throughout the Plan Area. The risk of spread of wildfire in the Plan Area is generally reduced by the flatness of the terrain and the presence of irrigated cropland. The proximity of County fire services and effective road network of the Plan Area would facilitate accessibility of emergency vehicles and result in favorable response times and further reduce risk of wildfire (see Section 4.14. *Public Services* for further discussion of County fire services).

Prior to building permit approval by Fresno County, as applicable to a particular VCIP project, the FCFPD's Fire Prevention/Fire Code Enforcement Bureau would review the construction plans for the VCIP project to ensure compliance with all code requirements and standards, including minimum requirements for emergency vehicle access and fire breaks. The relatively few VCIP projects in the SRA west of I-5 would be subject to enhanced restrictions during fire seasons, as well as review of the project plans by CAL FIRE. A full description of federal, state, and local statutes, regulations, codes, standards, and procedures related to fire safety and wildfire prevention is provided in Section 4.18.2. *Regulatory Context*.

Compliance with all applicable regulations, codes, standards, and required fire safety measures during construction, operation, and decommissioning of VCIP clean energy and infrastructure projects would avoid or substantially lessen potential impacts and provide a high degree of protection from wildfire risk. Therefore, the potential impact due to wildfire risk from implementation of the VCIP Energy Resource and Infrastructure Plans would be *less than significant*.

Mitigation Measures: No mitigation is required.

Impact WF-2. Impairment of Emergency Response or Evacuation Plans

Implementation of the VCIP Energy Resource and Infrastructure Plans would not substantially impair an adopted emergency response plan or emergency evacuation plan. (*Less-than-significant Impact*)

The Fresno County Master Emergency Service Plan coordinated by the Fresno County Office of Emergency Services outlines a general structure for emergency responders in the event of an emergency in the County, but {AM0012.1}

does not establish any specific evacuation routes or plans, standards, goals, or policies. No other plans designate any emergency or evacuation routes within the Plan Area or vicinity. The Fresno County Multi-Jurisdictional Hazard Mitigation Plan includes an exhibit showing the major roadways in the Plan Area that would be utilized in case of emergency or evacuation. Although these routes are not specifically identified as evacuation routes, they include State Routes and major County roads serving the area. All these State Routes and County roads are in good condition and have low ambient traffic volumes, and thus would have surplus traffic carrying capacity in the event they are needed for emergency access or evacuation routes.

The potential clean energy and infrastructure projects constructed under the VCIP would not alter or impair any of the existing road networks, and their construction and decommissioning would not require any closure of public roads that could impede access by emergency vehicles. Slow moving semi-trucks delivering materials and equipment to potential VCIP project construction vehicles could interfere with emergency response or evacuation procedures on the nearby State Routes and County Roads. The Plan Area includes very few residences or businesses that would be affected by VCIP project construction traffic during an emergency, however. Moreover, the construction contractors would implement the Traffic Control and Management Plan specified in Mitigation Measure TRA-1, which would manage incoming and outgoing construction and decommissioning traffic to avoid traffic conflicts and congestion.

During project operations, potential traffic generated by the VCIP solar and energy storage facilities would be very light and would be dispersed throughout the Plan Area, and thus would not have a substantial effect on emergency response or evacuation plans. The VCIP infrastructure facilities would generate very little to no operational traffic. Therefore, the VCIP projects would have no discernable impact on adopted emergency response and evacuation plans during the construction, operation, or decommissioning phases.

The VCIP Plan Area is served by an effective roadway network for purposes of emergency response and evacuation, and the construction, operation, and decommissioning of potential VCIP projects would not have a substantial effect on emergency response or evacuation procedures. Therefore, implementation of the VCIP Energy Resource and Infrastructure Plans would not impair an adopted emergency response plan or emergency evacuation plan, and the impact would be *less than significant*.

Mitigation Measures: No mitigation is required.

Impact WF-3. Exacerbation of Wildfire Risk due to Slopes, Prevailing Winds, etc.

Implementation of the VCIP Energy Resource and Infrastructure Plans would not exacerbate fire risks due to slopes, prevailing winds, or other factors and thus would not expose project occupants to pollutants from wildfire or uncontrolled spread of wildfire. (*Less-than-significant Impact*)

The VCIP Plan Area has a very gentle gradient with an average slope of 0.4 percent. Along the base of the foothills there are small areas along the western margin of the Plan Area where the maximum slope is 4.0 percent. Thus, the Plan Area does not contain lands with sufficiently steep slopes to substantially accelerate the spread of wildfire. Prevailing winds in the Plan Area are from the west and northwest which would potentially facilitate the spread of wildfire originating in the foothills into the Plan Area. However, the relevant {AM0012.1}

fire records indicate that wildfires from the foothills have rarely jumped over I-5 to the east, and the few that have done so were limited in extent. The VCIP includes a relatively small acreage of potential DFAs in the SRA portions of the Plan Area west of I-5, representing only approximately two percent of the total DFA acreage. These DFAs are interspersed with irrigated farmland which would provide fire breaks to impede the spread of wildfire to or near these project sites. In addition, the enhanced fire prevention measures and restrictions on activity during fire seasons within the SRA, combined with the heightened development review by the FCFPD, as applicable, and CAL FIRE required within the SRA, would avoid or substantially lessen the potential for wildfire or uncontrolled spread of wildfire within the Plan Area. These factors would minimize the potential for personnel at VCIP facilities or other sensitive receptors to be exposed to pollutants from wildfire.

Implementation of the VCIP Energy Resource and Infrastructure Plans would not exacerbate fire risks due to slopes, prevailing winds, or other factors and thus would not expose personnel at VCIP projects to pollutants from wildfire or uncontrolled spread of wildfire, and the impact would be *less than significant*.

Mitigation Measures: No mitigation is required.

Impact WF-4. Exacerbation of Wildfire Risk due to Installation of Infrastructure

Implementation of the VCIP Energy Resource and Infrastructure Plans would not require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment. (*Less-than-significant Impact*)

The proposed VCIP Infrastructure Plan includes gen-tie lines, connecting transmission lines, and five collection substations for collecting and conveying the VCIP solar generation to the power grid. All of these infrastructure elements would be located within the LRA and no planned infrastructure is located within an SRA or a Very High Fire Hazard Severity zone as designated by CAL FIRE.

The gen-ties and transmission lines would present potential fire ignition sources. However, design and construction of transmission facilities and substations are subject to NESC standards. Transmission lines are designed to withstand strong winds (thus tower or conductor failures are highly unlikely) and vegetation clearance requirements under NERC Standard FAC-003 and its California equivalents would provide for vertical and horizontal separation of towers and lines from existing vegetation and crops (e.g., orchard trees) as a potential ignition source. Compliance with existing codes and standards during installation and maintenance of the VCIP infrastructure elements, as required, would ensure that this infrastructure does not exacerbate fire risk or other environmental impacts.

The VCIP solar and energy storage projects would include buffers and fire breaks within their project sites. Each solar facility site would include 20-foot wide perimeter and internal access driveways, and each BESS facility would be surrounded by 10-foot wide vegetation-free area as prescribed by the California Fire Code (and Fresno County Fire Code). Most of the solar and energy storage facility sites would be vegetated with a prescribed seed mix of low growing grasses and forbs for dust control. The vegetation would be managed to keep growth to a maximum of four inches to minimize fuel load. Internal project driveways throughout the {AM0012.1}

solar and energy storage facilities would consist of compacted soil or would be surfaced with aggregate, and would provide sufficient clearance for access by emergency vehicles. The construction and maintenance vehicles using these driveways would be equipped with spark arresters which would minimize potential for ignition of wildfires. Water for fire suppression would be obtained from an on-site water tank with storage capacity as specified by FCFPD, which would also specify minimum fire flows based on its objective standards. Water supply for the on-site storage tanks would be provided by the District from its existing underground water distribution system serving all lands within the District. On privately-owned DFA lands, water supplies could be provided from either groundwater wells or the District's water supply system depending individual project circumstances. Therefore, the roads, fuel breaks, and water sources for the VCIP facilities would not exacerbate fire risk or other environmental impacts.

Implementation of the VCIP Energy Resource and Infrastructure Plans would not occur on lands classified by Cal Fire as having Very High Fire Risk, and includes small areas of Moderate Fire Risk, with the 99 percent of the Plan Area classified as Low Fire Risk. Projects developed under VCIP would involve the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities), but this infrastructure would serve to prevent fire or aid in the suppression of fire and would not exacerbate wildfire risk or result in temporary or ongoing impacts to the environment. Therefore, implementation of the proposed VCIP Energy Resource and Infrastructure Plans would have a *less-than-significant impact related to wildfire*.

It is noted that the subject of "Wildfire" is separate from the discussion of "Fire Projection" which is addressed in Section 4.15. *Public Services*.

Mitigation Measures: No mitigation is required.

Impact WF-5. Exposure of People or Structures to Post-Fire Flooding or Landslides

Implementation of the VCIP Energy Resource and Infrastructure Plans would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes. (*Less-than-significant impact*)

The Plan Area is virtually level with an average gradient of 0.4 percent from southwest to northeast. Small areas at the western edge of the Plan Area along the base of the foothills have a maximum slope of 4.0 percent. Based on USGS mapping of landslide susceptibility, these extreme western edges of the Plan Area are mapped as having a low susceptibility to landslides, and the steeper slopes outside the Plan Area farther to the west in the Diablo Range are mapped as medium and high susceptibility to landslides. The valley floor portions of the Plan Area are mapped as having no landslide susceptibility (USGS 2025b).

Approximately two percent of the potential DFA lands are located in the SRA and are designated Moderate Fire Hazard by CAL FIRE. Approximately 50 acres within these DFA areas are mapped as having low landslide susceptibility, and this area has a moderate slope of four percent. As discussed under Impact WF-1, compliance with all applicable codes, standards, and required fire safety measures during construction, operation, and decommissioning of VCIP clean energy and infrastructure projects, would provide the VCIP

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facilities with a high degree of protection from wildfire risk. In the unlikely event of wildfire occurring at a solar or energy storage facility located on the 50-acre area with low landslide susceptibility, the soil exposed by such a fire could be mobilized by a post-fire storm event and could be carried downslope in a minor flood/debris flow. However, given that the gradient of the affected area is just four percent, and the lands downslope of the affected area have a very gradual gradient of two percent, it is unlikely that any flood/debris flows generated would be substantial or would travel far or be very deep. Moreover, drainage controls would be in place to prevent runoff from flowing beyond the site boundaries. During construction and decommissioning, runoff, erosion, and sedimentation would be controlled by BMPs required in the SWPPPs, including stormwater/sediment basins which would capture runoff generated at the site. During facility operation, these basins would serve as debris basins that would capture any post-fire flood/debris flows generated at the site. Additionally, since the downslope lands consist of cultivated fields with no structures, the potential for exposure of people or structures to risks of flooding or landslides would not be substantial.

The remaining 98 percent of potential DFA lands within the Plan Area have gradients of less than two percent, and 99.9 percent of potential DFA lands are mapped as having no landslide susceptibility. The VCIP infrastructure elements would be located entirely on the valley floor where the land is essentially flat and not susceptible to landslides. In the unlikely event of wildfire within a solar and/or energy storage facility on a DFA site, or within an infrastructure site or corridor, the level terrain would prevent initiation of post-fire runoff, flooding, slope instability, landslides, or drainage changes.

In summary, implementation of the VCIP Energy Resource and Infrastructure Plans would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes, and the impact would be *less than significant*.

Mitigation Measures: No mitigation is required.

4.18.3.2. TRANSMISSION CORRIDORS OUTSIDE THE VCIP

The transmission corridors for delivery of solar generation from VCIP projects to urban electricity markets in northern and southern California have been identified at a conceptual level in this PEIR to allow a very general discussion of environmental impacts associated with transmission line development in these corridors for informational purposes. These transmission delivery corridors extend far beyond the District's boundaries and are not part of the proposed VCIP. Planning and approval of these outside transmission lines are under the jurisdiction of state and federal energy regulatory agencies, public utilities, and counties and cities. The following discussion provides an overview of potential impacts associated with the outside transmission lines with respect to wildfire and is included for informational purposes only.

Risk of Wildfire and Related Effects

The fire hazard mapping by CAL FIRE shows that approximately half of the potential outside transmission corridors are in the SRA, with the remainder in the LRAs of the affected counties. The LRAs are located in the valley floor areas of the San Joaquin and Antelope Valleys, and the SRA lands cover the mountainous terrain of the Coast Ranges, the Tehachapi and the San Gabriel Mountains. Approximately six miles along the potential southern transmission corridor in the foothills of the San Gabriel Mountains are mapped as Very High Fire

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Hazard zone. The 176 miles of potential transmission corridor in the LRAs are “unzoned” for fire risk. Within the SRA, approximately 54 miles of proposed corridor are mapped as High Fire Hazard, 86 miles are mapped as Moderate Fire Hazard, and 33 miles are in the Low Fire Hazard zone (CAL FIRE 2024d).

The transmission lines would present potential fire ignition sources that would increase the potential for wildfire particularly in the remote mountain areas. However, design and construction of transmission facilities are subject to NESC standards. Transmission lines are designed to withstand strong winds (thus tower or conductor failures are highly unlikely) and vegetation clearance requirements under NERC Standard FAC-003 and its California equivalents would provide for vertical and horizontal separation of towers and lines from existing trees as potential ignition sources. The transmission lines would also be subject to utility Fire Prevention Plans and Wildfire Mitigation Plans prepared pursuant to state law.

The transmission lines would be routed adjacent to existing transmission lines and thus would utilize existing access roads to the tower sites particularly in the mountainous areas. The transmission segments passing through the SRA in the mountains would be subject to enhanced restrictions on construction during fire seasons, as well as review of these projects by CAL FIRE.

Compliance with all applicable regulations, codes, standards, and required fire safety measures during construction and operation of the outside transmission lines would avoid or substantially lessen potential impacts and provide a high degree of protection from wildfire risk.

Impairment of Emergency Response or Evacuation Plans

The transmission lines would be constructed at numerous installation sites throughout the region. Construction activity would be focused on the tower sites and all equipment and components would remain off-road after delivery. The public roadways in the potential corridor areas are in good condition and have low ambient volumes. The transmission projects would not alter or impair any of the existing road networks, and their construction would not require any closure of public roads that could impede access by emergency vehicles. The valley floor areas traversed by the potential transmission corridors include very few residences or businesses that would be affected by transmission construction traffic during an emergency. Construction of transmission crossings over public roads would be performed without road closures. Also, construction contractors would implement traffic control plans which would manage construction traffic to maintain safe driving conditions for the public and avoid traffic conflicts and congestion.

The transmission segments in the mountainous SRA would be accessed by utility access roads for the existing transmission lines and would have minimal effects on the very lightly traveled public roads in these remote areas. While these areas include few residences or businesses, construction of the transmission lines would include traffic control plans and would not impede emergency access and evacuation when needed.

Once completed, the operation and maintenance of the transmission lines would involve very low intensity activity consisting of periodic inspections and repairs, and on rare occasions would include replacement of components. These activities would have little or no effect on emergency response or evacuation plans.

The lands traversed by the outside transmission lines are served by an effective roadway network for purposes of emergency response and evacuation. Construction and operation of the transmission lines would not have a substantial effect on emergency response or evacuation plans and procedures.

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Exacerbation of Wildfire Risk due to Slopes, Prevailing Winds, etc.

The potential transmission segments in the LRAs in the San Joaquin Valley would pass over lands that are essentially flat with vegetation consisting of agricultural crops and few trees. Given the absence of sloping lands and moderate prevailing winds, the wildfire risk would not be exacerbated by conditions in this area. In the Antelope Valley segments, the land is gently sloping but subject to strong winds. Given the sparse vegetation of this semi-desert valley, the potential exacerbation of wildfire would be moderated by generally low fuel loads.

In the SRA lands that would be crossed by the transmission corridors, most of these mountain areas consist of steep terrain with variable fuel loads ranging from oak forests to savanna grasslands. These SRA lands are subject to variable winds with the potential for strong gusts through mountain gaps. All these mountain areas have been subject to historical wildfires, although the western corridor over the Coast Ranges to Moss Landing has undergone relatively few wildfires in the past (CAL FIRE 2025b).

In response to the severe wildfire conditions throughout the state over the past 10 years, all California electrical utilities have been required by state legislation to prepare Fire Prevention Plans and Wildfire Mitigation Plans. Implementation of these plans, along with compliance with applicable regulations, codes, and construction standards, reduce the risk that the outside transmission lines would be subject to wildfires exacerbated by adverse conditions of slope, prevailing winds, and other factors.

Exacerbation of Wildfire Risk due to Installation of Infrastructure

As electrical infrastructure, transmission lines generally do not require supporting infrastructure other than dedicated access roads in remote areas. Within the valley floor segments, the transmission corridors would be accessible by existing public roads and farm roads and thus would require few, if any, dedicated access roads. Within mountainous areas, the transmission lines would run adjacent to existing transmission lines that have existing access roads. Maintenance crews would be trained in fire prevention and equipment and vehicles would include spark arresters. The utility access roads are closed to the public which limits potential for human-caused fire ignition. Compliance with regulations, codes and safety procedures applicable to maintenance activities would minimize the potential for the outside transmission lines to be subject to wildfire risk exacerbated due to installation of infrastructure.

Exposure of People or Structures to Post-Fire Flooding or Landslides

Approximately half of the overall length of the outside transmission corridors would pass through mountain and foothill areas with moderate to steep slopes. Most of these areas are mapped as having moderate to high susceptibility to landslides. The only area mapped with very high landslide susceptibility is in the San Gabriel Mountains northwest of the Vincent Substation (USGS 2025b). Thus, the potential for post-fire flooding or landslides is high in the mountain transmission segments. However, the mountainous areas traversed by the transmission corridors do not include many residents or businesses. As such, few people or structures would be exposed to significant risks of downstream flooding or landslides as a result of runoff, post-fire slope instability, or drainage changes as a result of potential wildfires in the vicinity of the outside transmission corridors.

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4.18.3.3. CUMULATIVE IMPACTS

Risk of Wildfire and Related Effects

As discussed under Impact WF-1, most of the VCIP Plan Area is located within the LRA which is “unzoned” for fire hazard by CAL FIRE. Approximately five percent of the Plan Area is in the SRA west of I-5, but none of these lands are zoned Very High Fire Hazard. All potential DFAs in the SRA are zoned Moderate Fire Hazard. The VCIP clean energy and infrastructure projects would introduce new ignition sources to Plan Area. However, the risk of wildfire would be avoided or substantially reduced through fire safety and protection measures to be incorporated into the design, construction, and operation of the VCIP facilities, as required by applicable laws, regulations, codes, and standards. These fire safety and protection measures would reduce the risk of wildfire within the VCIP Plan Area to less-than-significant levels.

Most of the pending, approved, and completed projects in the Plan Area and vicinity are located within the LRAs of Fresno and Kings counties, which are “unzoned” for fire hazard by CAL FIRE. Three pending projects are located in the SRA west of I-5, but none of these projects are on lands zoned Very High Fire Hazard. The cumulative projects would implement fire safety and protection measures as required by existing laws, regulations, codes, and standards, which would reduce the wildfire risk at each cumulative project to less-than-significant levels.

The lands traversed by the outside transmission corridors would be subject to development in the vicinity as allowed under the counties’ general plans. Most of the development in the vicinity of the transmission corridors would likely consist of dispersed residential construction in rural areas or at urban interface areas. Enforcement of local building and fire codes would require enhanced fire protection measures in the rural areas including fireproofing, vegetation clearance, and defensible space standards. The transmission projects would also be subject to vegetation clearance requirements, numerous other fire safety requirements, and enhanced restrictions on construction during fire season in the SRA. It is unlikely that the low wildfire risk associated with rural development under the county general plans would combine with low wildfire risk of the transmission projects in the vicinity to result in a cumulatively significant wildfire risk.

Wildfire risks associated with potential VCIP projects, including outside transmission projects, are not substantial and are not expected to combine with other cumulative projects to produce a cumulatively significant wildfire risk. Therefore, the cumulative wildfire risk would be *less than significant and the contribution by VCIP projects would not be considerable*.

Impairment of Emergency Response or Evacuation Plans

As discussed under Impact WF-2, the County’s emergency response plans do not specifically identify evacuation routes. However, the VCIP Plan Area and vicinity have an effective roadway network consisting of State Routes and County roads. These roadways are in good condition and have low ambient traffic volumes, and thus would have surplus traffic carrying capacity in the event they are needed for emergency access or evacuation routes. The VCIP projects would implement traffic control plans to manage construction traffic to avoid traffic conflicts and congestion. Traffic generated by operation of VCIP facilities would be very light. Therefore, the VCIP projects would have no discernable impact on adopted emergency response and evacuation plans during the construction, operation, or decommissioning phases.

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Most cumulative projects in the VCIP vicinity have been completed and are operational. Several large solar and energy storage projects are pending or approved but not yet constructed. However, these projects are widely separated, and each project would implement traffic control plans, and thus their construction traffic is unlikely to combine to create cumulative traffic congestion that would impede emergency access or impair evacuation procedures (see Section 4.16. *Transportation*, Mitigation Measures TR-1 [Traffic LOS Mitigation for Project Construction and Decommissioning] and TR-2 [Traffic Safety Measures for VCIP Project Construction and Decommissioning]). Moreover, it is likely that the pending and approved solar and energy storage projects would be completed prior to 2029 when the first major phase of VCIP development is proposed to commence. The very light operational traffic generated by these projects would not combine with VCIP construction traffic to interfere with emergency access or evacuation procedures.

In addition, several relatively small urban development projects in the City of Lemoore are pending or approved but not yet constructed. These projects are far removed from the nearest potential VCIP projects, so the traffic they generate would be unlikely to interact with traffic from VCIP project construction or operation. These projects are not located in a fire hazard zone and their construction and operation is unlikely to interfere with emergency access or evacuation plans, either individually or cumulatively.

The lands in the vicinity of the outside transmission corridors would be subject to rural development as allowed in the counties' general plans. This development would mainly consist of dispersed rural residential that would be required to have access to a maintained public road. Construction and operation of the outside transmission lines would not result in closure of public roads, and the low intensity of traffic generation by construction and operational activity associated with the transmission lines would not impede emergency access or impair evacuation procedures. As such, it is unlikely that the effects of the transmission line construction and operation would combine with cumulative rural development in the vicinity to adversely affect emergency access or evacuation procedures.

Construction, operation, and decommissioning of potential VCIP projects, in addition to outside transmission projects, combined with other cumulative projects would not have a substantial effect on emergency response or evacuation procedures. Therefore, the cumulative impact would be *less than significant and the contribution of VCIP projects would not be considerable*.

Exacerbation of Wildfire Risk due to Slopes, Prevailing Winds, etc.

As discussed under impact WF-3, the VCIP Plan Area does not contain lands with sufficiently steep slopes to substantially accelerate the spread of wildfire. Prevailing winds in the Plan Area are from the west and northwest, which could facilitate the spread of wildfire originating in the foothills into the Plan Area. However, the relevant fire records indicate that wildfires from the foothills have rarely jumped over I-5 to the east, and the few that have done so were limited in extent.

The pending, approved, and completed cumulative projects in the Plan Area and vicinity are similarly located on essentially flat sites within the Fresno and Kings Counties' LRAs with no history of wildfire. Three cumulative projects in the SRA west of I-5 are within or near historical burn areas. However, these sites are also flat and thus would not exacerbate wildfire risk due to slopes. While prevailing winds could exacerbate wildfire risk in the SRA area, there are no potential DFAs near or downwind of the three cumulative project sites in the SRA that could combine with the cumulative projects to substantially increase the cumulative wildfire risk.

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Approximately half of the outside transmission corridors would traverse mountainous areas with moderate to steep slopes in areas where strong wind gusts can occur. A small amount of dispersed rural development would be allowed in the vicinity of these transmission lines under the counties' general plans. Although the slope and wind conditions could exacerbate wildfires in these areas, the strict code requirements and standards applicable to transmission construction, including restrictions on construction in the SRA during fire season, as well as implementation of the utilities' fire protection and wildfire mitigation plans, would reduce the potential for ignition and spread of wildfire. Stringent fire-safe building requirements would also apply to construction of any residential or other development in these areas. Thus, the potential for cumulative exacerbation of wildfire due to slopes, winds, and other factors due the effects of transmission line construction and operation, combined with the effects of other cumulative development in these areas would be less than significant.

Construction, operation, and decommissioning of potential VCIP projects, in addition to outside transmission projects, would not combine with other cumulative projects to exacerbate fire risks due to slopes, prevailing winds, or other factors. The cumulative impact would be *less than significant and the contribution of VCIP projects would not be considerable*.

Exacerbation of Wildfire Risk due to Installation of Infrastructure

As discussed under Impact WF-4, the proposed VCIP includes infrastructure such as substations and gen-tie and transmission lines that would present potential fire ignition sources. Compliance with applicable codes and standards during installation and maintenance of the VCIP infrastructure elements as required by state and federal energy regulatory agencies, public utilities, and counties and cities, would ensure that this infrastructure does not exacerbate fire risk.

Within the VCIP Plan Area and vicinity, several large solar and energy storage projects are pending or approved but not yet constructed. These cumulative projects would include project substations and gen-tie lines to connect with the state electrical grid. This infrastructure would be designed, constructed and operated in compliance with applicable laws, regulations, codes, and standards to ensure that this infrastructure does not exacerbate fire risk. Therefore, the cumulative potential to exacerbate wildfire risk would be less than significant.

The outside transmission lines would introduce new infrastructure, much of it through mountainous areas of the SRA. The outside transmission lines would be constructed adjacent to existing transmission lines, however. Since the new transmission lines would be served by existing utility access roads that serve the existing transmission lines, few if any new access roads would be required. The general plans of the affected counties would allow rural residential development in the vicinity of the transmission lines. Strict code requirements, construction standards, fire prevention plans, and mitigation plans would apply to the new transmission lines. The new residential construction in the hillside areas would also be subject to strict fire prevention and protection requirements in the SRA. Thus, the installation of infrastructure associated with the outside transmission lines would not combine with the effects of new rural development in the vicinity to cumulatively exacerbate the risk of wildfire.

In summary, the construction, operation, and decommissioning of potential VCIP projects, in addition to outside transmission projects, would not combine with other cumulative projects to exacerbate fire risks due to installation of infrastructure. The cumulative impact would be *less than significant and the contribution of VCIP projects would not be considerable*.

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Exposure of People or Structures to Post-Fire Flooding or Landslides

As discussed under Impact WF-5, most of the Plan Area is virtually level and has no potential for landslides. A few small areas at the western edge of the Plan Area along the base of the foothills have a maximum slope of four percent. Based on USGS mapping of landslide susceptibility, these areas are mapped as having a low susceptibility to landslides. The potential solar and energy storage projects located in DFAs in these moderately sloping areas. These potential VCIP projects would include stormwater detention basins that would act as debris basins in the event of post-fire flooding or debris flows. Additionally, given that lands downslope of these DFA areas generally consist of cultivated fields with no structures, the potential for exposure of people or structures to risks of flooding or landslides would not be substantial.

Most of the pending, approved, and completed cumulative projects in the VCIP Plan Area and vicinity are in the flat valley area east of I-5. These lands are not susceptible to landslides. Any post-fire stormwater would be retained within each site. The four cumulative projects located west of I-5 are also located on essentially flat sites with no landslide susceptibility or potential to generate runoff that could cause flooding downstream.

Regarding outside transmission corridors, approximately half of the corridors would traverse mountainous areas with a moderate to high susceptibility to landslides. The transmission towers would be sited and designed based on geotechnical studies and would avoid known or potential landslide areas. Vegetation clearance would be confined to the immediate vicinity of the towers, with the exposed soils revegetated after construction. The general plans of the counties traversed by the transmission corridors would allow rural development in the vicinity of the transmission lines; however, such construction would be required to avoid the toes of steep slopes and areas subject to flooding or landslides. Such construction would also require geotechnical studies to avoid or mitigate areas of unstable slopes. The potential for post-fire flooding, slope instability, or landslides would be avoided or substantially reduced for both the outside transmission projects and other cumulative development in the vicinity. Therefore, construction and operation of the outside transmission lines would not combine with the effects of new rural development in the vicinity to cumulatively result in the exposure of people or structures to post-fire flooding or landslides.

Construction, operation, and decommissioning of potential VCIP projects would not combine with other cumulative projects to expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes. The cumulative impact would be *less than significant and the contribution of VCIP projects would not be considerable*.

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Fresno County 2024e	County of Fresno. April 2024. <i>Fresno County Multi-Jurisdictional Hazard Mitigation Plan</i> . https://www.fresnocountyca.gov/Resources/Hazard-Mitigation-Plan
OAG 2022	Office of the Attorney General. October 2022. <i>Best Practices for Analyzing and Mitigating Wildfire Impacts of Development Projects Under the California Environmental Quality Act</i> . https://oag.ca.gov/system/files/attachments/press-docs/Wildfire%20guidance%20final%20%283%29.pdf
USGS 2025b	U.S. Geological Survey. <i>U.S. Landslide Inventory and Susceptibility Map</i> . As of April 25, 2025. https://usgs.maps.arcgis.com/apps/webappviewer/index.html?id=ae120962f459434b8c904b456c82669d

5. EFFECTS FOUND NOT TO BE SIGNIFICANT

Preliminary review of the proposed VCIP based on Appendix G of the CEQA Guidelines determined that VCIP implementation would result in no impact or a less-than-significant impact related to Recreation. CEQA Guidelines section 15128 requires that “[a]n EIR shall contain a statement briefly indicating the reasons that various possible significant effects of a project were not determined to be significant and were therefore not discussed in detail in the EIR.”

XVI. RECREATION

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

- a) 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.***

No Impact: The VCIP energy and infrastructure 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. Therefore, the implementation of the VCIP would not result in substantial physical deterioration of such facilities and there would be *no impact*.

- b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.***

No Impact: The VCIP energy and infrastructure facilities would not include recreational facilities, nor would they require the construction or expansion of recreational facilities. Therefore, the implementation of the VCIP would not have an adverse physical impact on the environment relative to the construction or expansion of such facilities, and there would be *no impact*.

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6. ALTERNATIVES TO THE PROPOSED PROJECT

6.1. INTRODUCTION

To promote informed decision making, 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 4 of this PEIR, the potentially significant impacts associated with VCIP implementation – which would occur over an approximately 40-to-50-year period, consisting of 10 years of construction, followed by operation, and decommissioning – can largely be avoided or mitigated to less than significant levels through the mitigation measures identified in this PEIR.¹ The following alternatives are evaluated to provide a comparison of relative impacts between the alternatives and development under the proposed VCIP over this period.

1. No Project Alternative: This alternative assumes that the VCIP would not be implemented, and instead incremental solar and infrastructure development would continue through individual projects alongside existing agricultural operations.
2. Reduced Project Size Alternative: This alternative assumes that only 72,000 acres of District-owned lands would be included in the Development Focus Areas (DFAs) for solar and energy storage facilities, rather than the approximately 136,000 acres identified in the proposed VCIP. (This area is shown in Figure 2.3-1 as “District-Owned Land.”) The reduced DFAs would represent 52 percent of the planned DFAs under the proposed VCIP, and would have both a generating and an energy storage capacity of approximately 11,000 megawatts (MW). The Reduced Project Size Alternative would include the District-owned lands in the northern and east-central portions of the Plan Area. The planned five collection substations and connecting transmission lines would remain in this alternative, albeit at approximately half of their planned capacities. It is assumed that construction of the Reduced Project Size Alternative would be phased over 10 years, with an average buildout rate of about 1,100 MW per year.

Additional project alternatives, which were considered but not selected for detailed analysis, are summarized in Section 6.3.5., along with the reasons they were not analyzed further.

6.2. VCIP PROJECT OBJECTIVES

The VCIP is intended to promote the District’s overall goals related to its mission of water supply reliability/water service efficiency, and state and industry goals for renewable energy, including objectives related to water supply, energy, climate change, long-term viability of agriculture in the region, and economic development. The specific objectives of each of the project proponents are set forth below.

¹ As described in Section 2. *Project Description*, construction of VCIP solar facilities would be phased, with construction expected to start in 2028 and with full buildout anticipated in 2038. It is anticipated that projects would be decommissioned in the order developed. For example, it is expected that the first projects constructed in 2029 would be the first to be decommissioned, whereas the final projects constructed in 2038 would be the last to be decommissioned. Accordingly, the proposed VCIP implementation period is expressed as a range.
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Westlands Water District

- Utilize the District's location, topography, and excellent insolation (solar radiation energy) attributes to promote the siting of solar generation, storage, and transmission of renewable energy, in furtherance of federal, state, and local renewable energy and carbon reduction goals over the next 25 years or more.
- Balance the promotion of long-term but temporary development of solar energy projects and associated storage and transmission facilities with the protection of environmental resources, which may include, among other things, protection of agricultural, biological, cultural, and water resources.
- Avoid or substantially reduce environmental impacts associated with solar development, construction, and operation through low-impact design, short construction timeline with minimal ground disturbance, low amounts of impervious surfaces, the continued use of existing habitat by present wildlife, co-location of energy and agricultural activities where practicable,
- Ensure financing of decommissioning and site reclamation at the end of the project life in order to restore the site to conditions suitable for agricultural use.
- Utilize existing facilities, roads, and other infrastructure to the extent feasible.
- Identify preferred transmission corridors to efficiently convey renewable energy from VCIP projects to the statewide electricity market and reduce dependence on, and environmental impacts such as wildfire risk associated with, long-distance transmission.
- Contribute to the solution of reduced water supply reliability by: (i) providing productive long-term but temporary repurposing of those lands from irrigated agriculture and for renewable energy production, and (ii) ensuring irrigated agriculture on the repurposed lands can be restored following the decommissioning of the renewable energy projects, particularly with advancement of water conservation and irrigation technologies.
- Facilitate implementation of the Sustainable Groundwater Management Act (SGMA) by: (i) contributing to the conjunctive use of groundwater for irrigation, (ii) promoting drought resiliency, (iii) reducing the likelihood of undesirable results like subsidence, including in the vicinity of sections of the San Luis Canal/California Aqueduct, and (iv) implementing the VCIP pursuant to the Westside Subbasin Groundwater Sustainability Plan (GSP) in conjunction with other agricultural land repurposing management actions.
- Address the chronic shortage of CVP contract water deliveries by promoting repurposing of farmland and by facilitating the redirection of scarce surface water allocations to other productive agricultural land within the District.
- Provide utility-scale power generation on farmland that has been fallowed or removed from irrigated agriculture due to lack of a reliable surface water supply, which reduces pressure to develop renewable energy on prime agricultural land elsewhere. Promote expeditious and efficient repurposing of farmlands through a comprehensive planning process to address transmission capacity constraints on further incremental clean energy development in the District.

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- 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).
- Contribute to overall reduction in greenhouse gas emissions by generating electricity that is not based on the combustion of fossil fuel.
- 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 job creation and training programs for local residents, use of local businesses and vendors, financial contributions to community development projects and programs, and increased property tax and sales tax revenues.

Golden State Clean Energy

- Help implement the state's Global Warming Solutions Act of 2006 (AB 32), as supplemented in 2016 by SB 32, by facilitating the development of up to 21,000 MW of non-fossil fuel based sources of electricity that will replace existing fossil-based generation and thereby contribute to achieving the state's goal of carbon neutrality by 2045.
- Provide new sources of energy storage that support the state in achieving its renewable energy and carbon neutrality targets, and provide transmission facilities for conveying the renewable energy to the state's electrical load centers.
- Potentially provide the District with a direct source of renewable energy for operation of the District's Groundwater Management Program wells, filtration booster pumps, and other District owned facilities.
- Provide for utility-scale energy generation on disturbed lands which provide minimal habitat value for wildlife.
- Provide the foundation for a renewables development program which will generate an average of 6,000 construction jobs for at least 10 years, in addition to approximately 800 permanent jobs and approximately 400 part-time jobs upon VCIP buildout.
- Promote local hiring by establishing a job creation and training program for local residents.
- Positively contribute to the local economy through stimulation of economic activity such as creation of secondary multiplier employment and local procurement of equipment, goods and services.
- Provide community benefits through increased property tax revenues and increased sales tax receipts through local procurement and establishment of local points of sale for materials sourced from outside the area.

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6.3. ALTERNATIVES ANALYSIS

6.3.1. No Project Alternative

CEQA Guidelines section 15126.6(e)(1) requires 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 No Project Alternative assumes that incremental energy resource and infrastructure development and mitigation for such projects would continue to occur within the District’s service area on an ad hoc basis in the absence of a comprehensive plan for such development.

Under the No Project Alternative, the District would not adopt the VCIP to provide a strategic approach to renewable energy development within the Plan Area (i.e., the Fresno County portion of the District’s service area). Instead, the District would likely execute purchase or lease agreements with individual developers for renewable energy projects on District-owned lands on an incremental basis as it has done over the past 15 years. Private landowners would also be likely to enter similar arrangements for renewable development on their lands, as has been the case in the recent past. Each renewable energy project would be responsible for connecting to the state’s power grid, which would involve the construction of gen-tie lines of various lengths to the nearest collection substations. However, conveying the generated power to the state’s load centers would be inhibited by increasing capacity constraints in the bulk transmission system. While planning efforts have been ongoing at the state level to address transmission capacity, there are no specific plans or programs to construct additional transmission capacity in the San Joaquin Valley. Without substantial upgrades to the transmission corridors linking the District to the load centers in northern and southern California, there are limits to the amount of exportable renewable energy that can be produced in the District. Given these constraints, the maximum amount of deliverable renewable energy generated within the District under the No Project Alternative is unknown and cannot be reliably forecasted, but it is likely substantially lower than the amount that would be generated under the VCIP.

The impacts associated with the No Project Alternative are discussed below, relative to the existing environmental baseline and as compared to impacts associated with implementation of the proposed VCIP.

Aesthetics. Given the overall scale of energy development that would occur under the VCIP, and the contiguous nature of much of that development, the planned VCIP solar development would substantially change the character of portions of the Plan Area from cultivated and fallowed farmland to solar and battery energy storage system (BESS) facilities and supporting infrastructure. As discussed in Section 4.1. *Aesthetics*, while the visual impacts of individual energy projects on nearby receptors could be mitigated, the overall visual effect of VCIP implementation would be significant and unavoidable.

Under the No Project Alternative, the visual impacts from incremental development of individual energy projects would not be significant. However, under this alternative, the anticipated cumulative development of multiple projects in the areas most suitable for renewable energy facilities within the District (e.g., the DFAs identified by the proposed VCIP) would result in a visually significant and unavoidable impact. The overall scale of cumulative energy development would be limited by capacity constraints in the transmission system serving the San Joaquin Valley. Therefore, while the No Project Alternative would result in significant cumulative visual impacts, the level of overall visual impacts would be lower than those associated with buildout under the VCIP.

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Agricultural Resources. Of the lands identified in the VCIP as DFAs planned for solar/BESS projects, approximately 52 percent consist of “Farmland” and about 48 percent comprise non-Farmland under CEQA. In general, the Farmland areas consist of private lands, and the non-Farmlands generally comprise District-owned lands that have been retired from irrigated agriculture. All energy facilities on the DFAs would be decommissioned and each site would be reclaimed in accordance with an approved Reclamation Plan. All projects on repurposed cropland that are eligible for allocation or delivery of irrigation water (Eligible Cropland) would be reclaimed for the resumption of farming (WWD 2024b). All projects on repurposed Farmlands would be reclaimed after decommissioning, with the exception of 60 acres of Prime Farmland which would be permanently converted at the location of VCIP Substation No. 5. As such, the repurposing of the Farmlands for energy generation would be temporary but long-term and is conservatively considered in this PEIR to result in significant unavoidable impacts related to agricultural resources at the plan level. Although most farmland would not be permanently converted, the permanent conversion of farmland at the Substation No. 5 site would not be fully mitigable and would represent a significant and unavoidable impact of VCIP implementation.

Under the No Project Alternative, it is likely that energy development would be focused on the District-owned lands, mainly because they are clustered together and thus more centralized for purposes of efficient energy collection. The private lands are more dispersed and would be relatively inefficient to serve for energy collection.² Thus, under conditions where overall transmission capacity is constrained, it is likely that the District’s lands would be favored for development. Since the private lands consist mostly of Farmland, the relatively lower level of incremental cumulative development that would occur on those lands, compared to the level of development expected to occur on the non-Farmlands of the District, would result in a smaller acreage of Farmland being repurposed for energy generation. Thus, VCIP implementation would result in greater amount of Farmland that would be temporarily repurposed relative to the No Project Alternative. As such, the agricultural impacts from VCIP implementation would be relatively greater than the agricultural impacts associated with the No Project Alternative.

Air Quality. During the construction phases, the proposed VCIP energy 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 relatively minor amount of grading required on the flat terrain, and would be mitigated to less than significant by mitigation measures implemented in conformance with San Joaquin Valley Air Pollution Control District (SJVAPCD) requirements. The air emissions from commuting construction workers would be substantially reduced by trip reduction measures required to relieve traffic congestion and maintain acceptable service levels on travel routes to the VCIP construction sites. Once operational, the energy facilities would generate very low levels of air pollutants due to the low levels of operational and maintenance activities (see Section 4.3. *Air Quality*).

Under the No Project Alternative, individual solar projects and related infrastructure would generate air emissions, but these would be mitigated by measures required by the SJVAPCD. Since the overall level of development is expected to be lower under the No Project Alternative due to transmission capacity constraints, the overall air emissions from construction would also be lower under the No Project Alternative, relative to VCIP implementation. Once the solar/BESS project facilities are operational, emissions would be higher under the No Project Alternative because relatively more agriculturally related operations (including disking and weed control

²As discussed in Section 6.3.5., the dispersed nature of these privately owned lands makes a reduced project size alternative limited to such privately owned lands infeasible and unable to satisfy the project objectives.
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on fallowed land) would be expected to continue, as solar/BESS development would be limited due to the transmission capacity constraints within the District. In total, the emissions associated with those agricultural activities throughout the DFAs would be greater than operational emissions of potential solar/BESS facilities under the VCIP. As such, the results would be mixed with air emissions of the No Project Alternative being less during construction but greater during operation. The impacts from solar and related development would be mitigated to less-than-significant levels under both the VCIP and the No Project Alternative. However, under the No Project Alternative, emissions of air quality pollutants from agricultural activities (e.g., particulate matter) would continue (i.e., not be mitigated) on lands within the VCIP's DFAs. Consequently, when all lifetime emissions from VCIP construction, operation, and decommissioning are compared to overall emissions that would occur under the No Project Alternative, the emissions associated with the No Project Alternative would be greater. In summary, the overall air quality impacts associated with the No Project Alternative would be greater than those associated with VCIP implementation.

Biological Resources. Implementing the VCIP would result in potentially significant impacts to wildlife species, although these impacts would be reduced to less than significant by mitigation measures to be implemented in conjunction with each energy project, specifically measures to protect any special-status species during construction (see Section 4.4. *Biological Resources*). The No Project Alternative would also result in potentially significant impacts to biological resources, but these impacts would also be mitigated to less than significant through similar mitigation measures that would be imposed on individual projects as conditions of approval. However, since the No Project Alternative would result in less overall land disturbance than VCIP implementation, it would result in a lower potential for biological impacts. Thus, the No Project Alternative would result in a lower level of biological impacts than VCIP implementation.

Cultural and Tribal Cultural Resources. In general, the archaeological sensitivity of lands within the Plan Area is low, with a few sensitive areas occurring along drainage courses and along the base of the foothills. Any potential impacts to previously undiscovered resources would be mitigated by contingent measures to be implemented in the event any artifacts are encountered during grading and excavation for each VCIP project, thereby reducing any potential project impacts to less than significant (see Section 4.5. *Cultural and Tribal Cultural Resources*). Under the No Project Alternative, the potential for impacts to cultural resources at any given project site would similarly be generally low and mitigable. However, since the No Project Alternative would result in less overall land disturbance than VCIP implementation, it would result in less potential for cultural resources impacts. Therefore, the No Project Alternative would result in less potential impact to cultural resources than VCIP implementation.

Energy. As discussed in Section 4.6. *Energy*, the construction, operation, and decommissioning of the VCIP projects would be subject to an array of regulatory requirements related to the efficient use of fuel, use of renewable energy sources, solid waste reduction and diversion, and energy efficient building standards, among other requirements. These requirements would ensure that VCIP implementation would not result in the wasteful, inefficient, or unnecessary use of energy. In addition, 21,000 MW of the renewable energy generated under the VCIP would allow for the decommissioning of equivalent generation from natural gas fired power plants, which are approximately 940 times less energy efficient on an operational basis. As such, implementation of the VCIP would generate substantial energy-related environmental benefits.

Under the No Project Alternative, the amount of energy expended in project construction, operation, and decommissioning would be less than overall consumption by VCIP projects. However, the overall amount of

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renewable energy generation would also be less than would occur under full operation of the VCIP projects.³ The amount of fossil generation avoided by the VCIP projects would be greater than that offset under the No Project Alternative, and would more than compensate for the greater amount of energy consumed overall by the VCIP projects. As such, the No Project Alternative would result in fewer and less substantial environmental benefits than the VCIP over the subject implementation period. Therefore, selecting the No Project Alternative instead of the VCIP would result in greater energy impacts than those associated with VCIP implementation.

Geology, Soils and Paleontology. VCIP energy development would be exposed to geologic and soils hazards, although any potential hazards would be mitigated to less than significant through mitigation measures to be implemented in conjunction with each VCIP project (see Section 4.7. *Geology, Soils, and Paleontology*). Regarding paleontological resources, the Plan Area has generally very low sensitivity for the discovery of fossils, and any fossil discoveries during VCIP implementation would be mitigated by required protection and recovery protocols. Under the No Project Alternative, the potential for geology, soils, and paleontological impacts at any given project site would similarly be generally low and mitigable. However, since the No Project Alternative would result in less overall land disturbance than VCIP implementation, it would result in lower potential for geology, soils, and paleontological impacts. Therefore, the No Project Alternative would result in lower levels of geology, soils, and paleontological impacts than VCIP implementation.

Greenhouse Gas Emissions. Under the VCIP implementation, the greenhouse gases (GHGs) emitted in the construction, operation, and decommissioning of solar/BESS facilities and supporting infrastructure would be more than offset by the substantial avoided emissions from fossil-fueled power plants with equivalent generating capacity. The emissions generated by these gas-fired power plants offset by potential VCIP projects would be approximately 251 times greater than emissions under the VCIP. Under full buildout, the VCIP solar facilities would represent an annual net reduction of 13,408,070 MTCO₂e/yr, or a 99.6 percent net reduction in GHG emissions compared to the natural gas facilities replaced by the VCIP (see Section 4.8. *Greenhouse Gas Emissions*). As such, the VCIP would generate substantial environmental benefits related to GHG emissions reductions.

The No Project Alternative would involve lower overall levels of development, and thus would result in lower overall emissions of GHGs during construction, operation, and decommissioning. However, the lower levels of renewable energy generation under the No Project Alternative within the Plan Area would result in a less substantial net offset of fossil generation and therefore fewer environmental benefits. VCIP renewable development would result in a greater net avoidance of GHG emissions overall and thus would have a greater beneficial effect in terms of reducing the effects of climate change and achieving the state's GHG reduction targets, relative to the No Project Alternative. Therefore, selecting the No Project Alternative instead of the VCIP could result in higher levels of GHG emissions than those associated with VCIP implementation, in the sense that the No Project Alternative would forego opportunities in the Plan Area for offsetting the impacts of fossil-fueled generation which would continue to exacerbate adverse climate change effects.

Hazards and Hazardous Materials. During construction, operation, and decommissioning, the VCIP energy projects would involve the use of various fuels and materials which are classified as hazardous materials. However, hazardous materials management plans and response plans would be required for each solar/BESS

³ In the absence of a centralized power collection system as proposed for the VCIP, the amount of power that could be exported from the Plan Area would be very limited given the capacity constraints in the transmission system. While the maximum amount of power that could be generated under the No Project Alternative is unforeseeable, it would be substantially less than the 21,000 MW proposed for the VCIP.

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facility and would be implemented in case of accidental spill or unauthorized release of hazardous materials, resulting in a less-than-significant hazardous materials impact. In addition, for the VCIP projects, the potential for residual contamination from previous agricultural and petroleum industry operations within each project site would be fully investigated and remediated as appropriate. By temporarily repurposing farmlands, which have a greater overall potential for release of hazardous materials during farming operations compared to implementation of the VCIP, it is anticipated that the VCIP would have environmentally beneficial effects. Other potential hazards, such as development in proximity to oil and gas wells, safety hazards associated with existing fuel pipelines and electrical transmission lines, fire hazard from BESS, potential exposure to valley fever, potential exposure to electromagnetic fields (EMFs) from VCIP transmission and gen-tie lines, photo-voltaic heat island effects, or hazards to aviation, would all be less than significant or reduced to less than significant by mitigation measures identified in this PEIR. Thus, the potential impacts due to hazards or hazardous materials associated with implementing the proposed VCIP would be reduced to less-than-significant levels (see Section 4.9. *Hazards and Hazardous Materials*). As such, implementation of the VCIP would result in environmental benefits in this regard. In sum, under implementation of the proposed VCIP, the contamination from past and future sources of hazardous materials would be reduced to less than significant levels (see Section 4.9. *Hazards and Hazardous Materials*).

Under the No Project Alternative, the lands that would be developed for renewable energy and related infrastructure would be subject to the same conditions and requirements as addressed above for VCIP implementation. Since the No Project Alternative would involve relatively less development overall, the potential for hazardous materials impacts to occur during construction, operation, and decommissioning would be lower than for VCIP implementation. However, since there would be more farmland remaining in production under the No Project Alternative, there would also be greater overall potential for release of hazardous materials associated with the remaining farming operations (e.g., fertilizers, pesticides, fuels, lubricants, and solvents). In other words, the No Project Alternative would not fully result in the environmentally beneficial effects associated with long-term but temporary repurposing of farmland. Yet, it must be noted that the potential for site contamination is low given that agricultural operations would handle and utilize pesticides and herbicides in a safe manner as directed in manufacturers' specifications, although there is always the risk of uncontrolled leaks and spills of agricultural chemicals and fuels. Nevertheless, on balance, selecting the No Project Alternative instead of implementing the proposed VCIP would result in a slightly greater risk of hazardous material contamination relative to VCIP implementation.

In summary, the potential for hazardous materials impacts is low for both the planned VCIP implementation and the No Project Alternative, with no reliably forecasted difference between them in terms of impact level. Thus, the No Project Alternative would result in a similar potential for hazardous materials impacts compared to VCIP implementation.

Hydrology and Water Quality: Regarding erosion, sedimentation and runoff, VCIP implementation 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 construction and decommissioning would be minimized through standard erosion control measures, as required (see Section 4.10. *Hydrology and Water Quality*). The No Project Alternative would result in less overall development in the Plan Area, and thus would have a lower potential to result in hydrology and water quality impacts. Therefore, the No Project Alternative would result in a lower level of hydrology and water quality impacts related to erosion, sedimentation, and runoff than VCIP implementation, although the impact would be less than significant in both cases.

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Regarding consistency with implementation of a sustainable groundwater management plan, the VCIP would be implemented as an agricultural repurposing program pursuant to the GSP. As provided in Section 4.10.

Hydrology and Water Quality, the GSP identifies the VCIP as a potential groundwater management action that would promote the Subbasin's long-term groundwater sustainability. Thus, implementation of the VCIP would significantly advance the District's project objective of facilitating SGMA implementation. Because the No Project Alternative would not be implemented pursuant to the GSP, it would not advance the District's efforts to implement the GSP and enhance groundwater sustainability. Nevertheless, because all groundwater use related to the No Project Alternative would be subject to the GSP, it is assumed that the No Project Alternative would not conflict or obstruct implementation of the GSP.

In sum, the results would be mixed, as the No Project Alternative would result in a lower level impacts related to erosion, sedimentation, and runoff than VCIP implementation, whereas the VCIP would directly advance SGMA implementation and more directly promote groundwater sustainability.

Land Use and Planning: As discussed in Section 4.11. *Land Use and Planning*, VCIP implementation would be consistent with all applicable plans, policies and regulations, and thus would have no impact in this regard. Under the No Project Alternative, all proposed development would be required to be consistent with applicable plans, policies, and regulations to receive project approval. As such, there would be no land use and planning impact associated with the No Project Alternative. Therefore, the level of impact under the No Project Alternative would be same as the impact under the VCIP.

Mineral Resources: As discussed in Section 4.12. *Mineral Resources*, the only mineral resource sites within the Plan Area are a few exploratory oil wells which are not near any contemplated VCIP facilities. Thus, the impact of VCIP implementation on mineral resources would be less than significant. The No Project Alternative would be unlikely to have an impact on these few mineral resource sites since CalGEM would require any projects to be designed to provide any active or abandoned wells with secure separation from project facilities. Therefore, the impact of No Project Alternative would be similar to the impact of VCIP implementation on mineral resources.

Noise: VCIP implementation would result in increased noise from construction and decommissioning, 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 temporary and less than significant. Once completed, the noise from the operation of potential VCIP facilities would be mitigated by the application of required setbacks and other measures to ensure that operating equipment noise reaching sensitive receptors meets applicable noise standards (see Section 4.13. *Noise*). Under the No Project Alternative, the construction noise from individual projects would also be temporary and less than significant, and the operational noise would also be subject to mitigation. However, since less overall development would occur under the No Project Alternative, the potential noise generation would also be less than under the VCIP. Thus, the No Project Alternative would result in a lower level of noise impacts than VCIP implementation, although the impacts would be less than significant in both cases after mitigation.

Public Services: Projects under the proposed VCIP 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 4.14. *Public Services*). The No Project Alternative would result in less overall development and therefore would generate relatively less demand for fire and police services. Thus, the No Project Alternative would result in less public services impacts than the VCIP projects, although the impact would be less than significant in both cases.

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Transportation: During the construction and decommissioning phases, the potential VCIP projects would result in commuter trips to and from their sites by construction workers, and truck trips for delivery of equipment and materials. Given the geographic concentration of the contemplated VCIP implementation, especially in the early years, the VCIP traffic would result in potential level of service (LOS) impacts (the Fresno County General Plan Policy TR-A.3 imposes a LOS requirement). However, these impacts would be mitigated by required trip reduction measures, which would also result in substantial reductions in vehicle miles traveled (VMT). During project operations, the small operations and maintenance staff associated with potential VCIP projects would generate minimal traffic, which would be well below VMT screening levels (see Section 4.15. *Transportation*). The No Project Alternative would result in less overall development, and the traffic generated by incremental projects would likely be more dispersed than under the VCIP. Thus, the traffic volumes on any given roadway would likely be lower under the No Project Alternative. Construction VMT would also likely be lower under the No Project Alternative, although this would be somewhat offset by the greater relative reductions in VMT under the VCIP resulting from substantial required trip reduction measures. On balance, the No Project Alternative would generally result in less traffic impacts than the VCIP projects, although the impact would be less than significant in both cases.

Utilities and Service Systems: The potential VCIP facilities would require water supply, wastewater disposal, and solid waste disposal (see Section 4.17. *Utilities and Service Systems*). The VCIP's impacts on these utilities and service systems are summarized below, in comparison with the No Project Alternative.

Water Supply

The potential VCIP projects would require water supply during both the construction and operational phases. During grading and construction, water would be needed for dust control, equipment and vehicle cleaning, and domestic use. As discussed in Section 4.17. *Utilities and Service Systems*, construction water requirements would be approximately 0.15 acre-feet per acre of construction. It is expected that existing on-site agricultural wells would provide non-potable water for non-domestic use 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 0.004 acre-feet per acre per year. For projects on District-owned land, operational water would be provided from the District's contracted Central Valley Project (CVP) supply. For projects on private lands, operational water would be obtained from the underlying landowner from the owner's overall allocation of CVP contract water, groundwater, and/or supplemental surface water supplies procured by the District or private landowners – with sufficient groundwater supplies available to meet such operational water demands. For potential VCIP projects on District and privately-owned land, extremely minor demands for potable water supplies would be met through a water delivery service, which would provide municipal water from a source outside the Subbasin.

Under the No Project Alternative, less PV solar development would occur compared to VCIP implementation, so more land would be available for agricultural cultivation. Similar to baseline conditions, much of this land would be fallowed under the No Project Alternative due to overall water supply constraints. However, unlike the No Project Alternative, the proposed VCIP would be implemented as an agricultural land repurposing project pursuant to the GSP. Specifically, VCIP implementation would create an orderly framework for significant fallowing that has and will continue to occur and promote water supply reliability while utilizing the physical attributes that make the DFAs an excellent location for utility-scale solar generation and storage facilities. Under VCIP implementation, the relatively low water demands for facility construction and operation would facilitate the redirection of scarce water resources to productive agricultural lands with the most

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pressing needs. This would increase water supply reliability within the overall farming unit(s) within the Plan Area. In sum, the implementation of VCIP would advance the District's objectives related to water supply and SGMA implementation, which would result in significant environmentally beneficial effects. In contrast, due to its lack of a coordinated approach, the No Project Alternative would not directly advance these objectives and would result in less substantial environmental benefits. Instead, the No Project Alternative would maintain the status quo which would not support progress toward achieving groundwater sustainability in the District, and therefore would have a greater impact on water supply than would occur under VCIP implementation.

Wastewater

The wastewater disposal for the potential VCIP projects would be provided by portable chemical toilets during construction and decommissioning, with off-site disposal by sanitary contractors. During facility operation, wastewater disposal and treatment would be provided by onsite septic systems, which would be designed in accordance with County requirements to avoid impacts to groundwater. Under the No Project Alternative, wastewater treatment and disposal would be handled in the same way as for the potential VCIP projects. However, since less overall development would occur under the No Project Alternative, the potential for wastewater impacts would be relatively lower. Therefore, the No Project Alternative would result in lower level of wastewater disposal impact than VCIP implementation, although impacts would be less than significant in either case.

Solid Waste

With potential VCIP implementation, solid waste would be generated during construction, operation, and decommissioning. There are no constraints to solid waste collection, and there is sufficient landfill capacity to accommodate non-recyclable waste from the VCIP facilities, so the impact would be less than significant. Under the No Project Alternative, because less overall development would occur, there would be lower overall quantities of solid waste generation, compared to VCIP implementation. Therefore, the No Project Alternative would result in a lower level of potential solid waste disposal impact than VCIP implementation, although the impacts would be less than significant in either case.

Wildfire: As discussed in Section 4.18. *Wildfire*, none of the lands within the VCIP Plan Area are classified as Very High Fire Hazard Severity Zone, and VCIP implementation would have a less-than-significant impact regarding potential exposure of people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires. Since the No Project Alternative would be located entirely within the VCIP Plan Area and similar renewable energy facilities would be developed, the potential wildfire impacts under this alternative would be similar and less than significant.

In summary, the No Project Alternative would result in lower levels of impact than VCIP implementation 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 biological resources, cultural and tribal cultural resources, geology, soils and paleontology, noise, public services, transportation, wastewater disposal, and solid waste disposal, although all these impacts would be less than significant or fully mitigable with VCIP implementation. The No Project Alternative would result in greater levels of impact than VCIP implementation in the categories of air quality, energy, greenhouse gas emissions, and water supply, and similar levels of impact to VCIP implementation in terms of hazards and hazardous materials, hydrology and water quality, mineral resources, land use and planning, and wildfire. In addition, while VCIP implementation would result in significant and unavoidable impacts relative to aesthetics and agricultural resources, the No Project Alternative would also result in significant and unavoidable aesthetic and agricultural impacts, and thus would not eliminate or

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substantially reduce such impacts. Therefore, the No Project Alternative is not an environmentally superior alternative to implementation of the proposed VCIP. Moreover, the No Project Alternative would not go as far as the VCIP in fulfilling the project objectives, as restated at the beginning of this chapter, particularly the objectives related to enhancing water supply reliability, facilitating SGMA implementation, and helping meet the state's renewable energy and greenhouse gas reduction targets through long-term but temporary repurposing of farmland for the generation of fossil-free sources of electricity. (See Section 3.3.3. for detailed discussion of the environmentally superior alternative.)

6.3.2. Reduced Project Size Alternative

This alternative assumes that only 72,000 acres, which are owned by the District and have been removed from irrigated agriculture, would be included in Development Focus Areas for development of solar and energy storage facilities. (This area is shown in Figure 2.3-1 as "District-Owned Land.") Renewable energy projects would not occur on the 64,000 acres of privately owned lands, as contemplated by the VCIP. Instead, these privately owned lands would remain in agricultural cultivation or fallowed. Under the Reduced Project Size Alternative, the reduced DFAs would represent 53 percent of the proposed DFAs under the VCIP, and would have a generating capacity of approximately 11,000 MW, along with an equal amount of energy storage. The Reduced Project Size Alternative would include the District-owned lands in the northern and east-central portions of the Plan Area. The planned five substations and connecting transmission lines would remain in this alternative, albeit at approximately half of their planned capacities and sizes. It is assumed that construction of the Reduced Project Size Alternative would be phased over a period of 10 years, with an average buildout rate of about 1,100 MW per year. Like the VCIP, projects under the Reduced Project Size Alternative would also have an operations period of approximately 35 years.

The impacts associated with the Reduced Project Size Alternative are discussed below, relative to the impacts associated with VCIP implementation.

Aesthetics. Given the overall scale of energy development that would occur under the VCIP, and the contiguous nature of much of that development, VCIP implementation would substantially change the character of portions of the Plan Area from cultivated and fallowed farmland to solar and BESS facilities and supporting infrastructure. As discussed in Section 4.1. *Aesthetics*, while the visual impacts of individual energy projects on nearby receptors could be mitigated, the overall visual effect of VCIP implementation would be significant and unavoidable.

Under the Reduced Project Size Alternative, the visual impacts from individual VCIP projects would not be significant, but the concentrated solar/BESS development of large contiguous areas in the east-central portion of the Plan Area under this alternative would result in a significant and unavoidable visual impact. For example, motorists traveling along SR-33 between Three Rocks and Mendota would still experience 13 miles of near-continuous solar development on both sides of the highway. However, since the overall scale of development under the Reduced Project Size Alternative would be substantially smaller than implementation of the proposed VCIP, the overall visual impact under this alternative would be lower but still significant. In summary, while the Reduced Project Size Alternative would result in significant and unavoidable visual impacts, as would occur with VCIP implementation, the level of overall visual impacts would be lower than those associated with buildout under the VCIP.

Agricultural Resources. Of the lands identified in the VCIP as DFAs planned for solar/BESS, approximately 52 percent consist of "Farmland" (e.g., Prime Farmland and Farmland of Statewide Importance as mapped by CDOC)

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and about 48 percent comprise non-Farmland. In general, the Farmland areas consist of private lands, and the non-Farmlands are District-owned lands that have been retired from irrigated agriculture. While approximately 6,000 acres of District-owned land within the proposed DFAs are mapped as Farmland, these lands have also been removed from irrigated agriculture. All projects on repurposed cropland that are eligible for allocation or delivery of irrigation water (Eligible Cropland) would be reclaimed for the resumption of farming (WWD 2024b). All projects on repurposed Farmlands would be reclaimed after decommissioning, with the exception of 60 acres of Prime Farmland which would be permanently converted at the location of VCIP Substation No. 5. As such, except for these 60 acres, the repurposing of the Farmlands for energy generation/BESS facilities would be temporary. Although most Farmland would not be permanently converted, the permanent conversion of farmland at the Substation No. 5 site would not be fully mitigable and would represent a significant and unavoidable impact of VCIP implementation.

Under the Reduced Project Size Alternative, implementation of the proposed VCIP would be confined to the District-owned lands, most of which are not categorized as Farmland, and none of which are under Williamson Act contracts. This alternative would exclude private lands, most of which consist of Farmland (e.g., Prime Farmland and Farmland of Statewide Importance as mapped by CDOC). Thus, although VCIP implementation would not result in permanent Farmland conversion (except for the 60-acre site of VCIP Substation No. 5), it would result in temporary repurposing of Farmland, while the Reduced Project Size Alternative would result in relatively little repurposing of Farmland (i.e., since most District-owned lands are mapped as Farmlands of Local Importance which is not a category of Farmland under CEQA). As such, the agricultural impacts from overall VCIP implementation, would be relatively greater than the agricultural impacts associated with the Reduced Project Size Alternative. However, the Reduced Project Size Alternative would likely retain most of the infrastructure proposed for the VCIP including the backbone transmission corridor and the five collection substations in their present locations. Since substation No. 5 would involve the permanent conversion of up to 60 acres of Prime Farmland under this alternative, this would represent a significant and unavoidable impact which would not be avoided or substantially reduced in this alternative.

Air Quality. During the construction phases, VCIP implementation 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 minimized due to the relatively 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. The air emissions from commuting construction workers would be substantially reduced by trip reduction measures required to relieve traffic congestion and maintain acceptable service levels on travel routes to the VCIP construction sites. Once operational, the energy facilities would generate very low levels of air pollutants due to the low levels of operational and maintenance activities (see Section 4.3. *Air Quality*).

Under the Reduced Project Size Alternative, the overall level of development would be approximately half (52 percent) of that planned under VCIP. Thus, the overall project-related air emissions would also be approximately half of those under the Reduced Project Size Alternative, relative to VCIP implementation. For example, the total annual VCIP construction criteria pollutant emissions illustrated in Table 4.3-5 would be proportionally lower under the Reduced Project Size Alternative. However, this alternative would also include approximately 64,000 acres of agricultural land that would not be repurposed under the VCIP. Since air emissions associated with agricultural cultivation and managing fallowed land would be far greater than operational emissions from an equivalent area of VCIP development, and since project operations would occur for a substantially longer period than project construction and decommissioning, the overall lifetime air quality impacts associated with the Reduced Project Size Alternative would be greater than would occur under VCIP implementation.

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This analysis also considers the comparative air quality impacts that would occur in the vicinity of the Cantua Creek community, which contains the highest concentration of sensitive receptors in the VCIP DFAs. It is noted that compared to VCIP development, construction-related air quality emissions that would occur in the vicinity of Cantua Creek would be lower under the Reduced Project Size Alternative. This is because, under the VCIP, most of the contemplated projects in this area would occur on privately owned land (see *Chapter 3. Environmental Setting*, Figure 3.1-5), which would not be developed under this alternative. The VCIP would include portions of three DFAs within one mile of the Cantua Creek Community. Under the Reduced Project Size Alternative, the nearest DFA would be located over one mile to the southwest on District-owned land. Without the proposed solar/BESS development in the vicinity, there also would be no need for a potential gen-tie line to pass through the vicinity of Cantua Creek. However, during the period of project operations, the privately-owned VCIP DFA lands not repurposed under the Reduced Project Size Alternative would continue to be cultivated and/or managed as fallowed fields, which would generate substantially greater air emissions in the vicinity of Cantua Creek than development under VCIP. As provided in *Section 4.3 Air Quality*, the VCIP's potential to expose sensitive receptors to substantial pollutant concentrations would be less than significant, and this would also be anticipated to be the case under the Reduced Size Project Alternative. Ultimately, all air quality impacts with mitigation, to the extent required, would be less than significant under the VCIP and the Reduced Project Size Alternative. However, the comparative air quality impacts associated with the Reduced Project Size Alternative would be greater than those associated with VCIP implementation.

Biological Resources. Implementation of projects under the VCIP would result in potential impacts to protected wildlife species, although these impacts would be reduced to less than significant by mitigation measures to be implemented in conjunction with each VCIP project (see *Section 4.4. Biological Resources*). The Reduced Project Size Alternative would also result in potential impacts to biological resources, and these impacts would also be mitigated to less than significant. However, since the Reduced Project Size Alternative would result in less overall land disturbance than VCIP implementation, it would result in a lower potential for biological impacts. Additionally, as the Reduced Project Size Alternative would only be implemented on non-irrigated lands, a smaller range of habitat types would be affected compared to the VCIP. For example, whereas the DFAs under the VCIP would contain 33,610 acres of orchards/vineyards, little to none of this habitat (albeit habitat of low value, especially for raptors) exists within the previously identified 72,000 acres of District-owned lands. Thus, the Reduced Project Size Alternative would result in a similar or slightly lower level of potential biological impacts than VCIP implementation.

Cultural and Tribal Cultural Resources. In general, the archaeological sensitivity of lands within the Plan Area is low, with a few sensitive areas occurring along drainage courses and along the base of the foothills. Any potential impacts to previously undiscovered resources would be mitigated by contingent measures to be implemented in the event any artifacts are encountered during grading and excavation for each potential VCIP energy project, thereby reducing any potential project impacts to less-than-significant levels (see *Section 4.5. Cultural and Tribal Cultural Resources*). Under the Reduced Project Size Alternative, the potential for impacts to cultural resources at any given project site would similarly be low and mitigable. However, since the Reduced Project Size Alternative would result in less overall land disturbance than VCIP implementation, it would result in a lower potential for cultural resources impacts. Therefore, the Reduced Project Size Alternative would result in lower levels of impacts to cultural resources than the proposed VCIP.

Energy. As discussed in *Section 4.6. Energy*, the construction, operation, and decommissioning of potential VCIP projects would be subject to an array of regulatory requirements related to the efficient use of fuel, use of renewable energy sources, solid waste reduction and diversion, and energy efficient building standards, {AM0015.1}

among other requirements. These requirements would ensure that VCIP implementation would not result in the wasteful, inefficient, or unnecessary use of energy. While VCIP's lifetime energy consumption would be approximately 284,215,668 MBtu⁴ (Table 4.6-1 of this PEIR), it would generate approximately 45,669,964,560 MBtu of renewable energy, which would allow for the decommissioning of equivalent generation from natural gas fired power plants. After accounting for its energy consumption demands, the VCIP would have the benefit of producing a total of 45,385,748,892 MBtu of renewable energy.

Under the Reduced Project Size Alternative, the amount of energy expended in project construction, operation, and decommissioning would be approximately 52 percent less than overall consumption by VCIP projects as provided in Table 4.6-1 of *Section 4.6 Energy*. However, the overall amount of renewable energy generation would also be approximately half of that under full operation of the VCIP projects. Specifically, over its lifetime, the Reduced Project Size Alternative would consume approximately 148,874,874 MBtu and generate approximately 23,922,362,389 MBtu of renewable energy. Thus, after accounting for its energy consumption demands, the Reduced Project Size Alternative would have the benefit of producing a total of 23,773,487,515 MBtu of renewable energy. While this net renewable energy production would be substantial, it would be 21,463,386,503 MBtu lower than that associated with the VCIP.

Consequently, the amount of fossil fuel consumption (e.g., by natural gas power plants) avoided by the VCIP projects would be correspondingly greater than that offset under the Reduced Project Size Alternative, and would more than compensate for the greater amount of energy consumed overall by the VCIP projects. As such, implementation of the Reduced Project Size Alternative would generate fewer and far less substantial environmental benefits related to energy than implementation of the VCIP. As the contemplated solar facilities would be vastly more efficient than even the most energy efficient natural gas-fueled power plants, there is a significant difference in the environmental benefits associated with an offset of 21,000 MW (VCIP) versus 11,000 MW (Reduced Project Size Alternative). Therefore, selecting the Reduced Project Size Alternative instead of the VCIP would result in greater impacts related to energy than those associated with VCIP implementation.

Geology, Soils and Paleontology. Potential VCIP energy development would be exposed to geologic and soils hazards, although any potential hazards would be mitigated to less than significant through mitigation measures to be implemented in conjunction with each solar project (see *Section 4.7. Geology, Soils, and Paleontology*). Regarding paleontological resources, the Plan Area has generally very low sensitivity for the discovery of fossils, and any fossil discoveries during VCIP implementation would be mitigated by required protection and recovery protocols. Under the Reduced Project Size Alternative, the potential for geology, soils, and paleontological impacts at any given project site would similarly be low and mitigable. However, since the Reduced Project Size Alternative would result in less overall land disturbance than VCIP implementation, it would result in lower potential for geology, soils, and paleontological impacts. Therefore, the Reduced Project Size Alternative would result in lower levels of geology, soils, and paleontological impacts than VCIP energy development.

Greenhouse Gas Emissions. During its lifetime, the proposed VCIP's total GHG emissions would be approximately 2,086,601 MT CO₂e (see Table 4.8-1 [construction and decommissioning], and Table 4.6.1 [total lifetime]). However, under full buildout, the VCIP solar facilities would represent an annual net reduction of 13,401,152 MTCO₂e/yr, or a 99.5 percent net reduction in GHG emissions compared to the natural gas facilities replaced by the VCIP (see *Section 4.8. Greenhouse Gas Emissions*). Thus, under implementation of the

⁴ MBtu is defined as one thousand British thermal units (Btu). The consumption of 284,215,668 MBtu from fossil fuel (gasoline) equates to 2,107,946 MT CO₂e (Metric Tons Carbon Dioxide Equivalent).
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proposed VCIP, the GHGs emitted in the construction, operation, and decommissioning of solar/BESS facilities and supporting infrastructure would be more than offset by the substantial avoided emissions from fossil-fueled power plants with equivalent generating capacity (see Section 4.8. *Greenhouse Gas Emissions*). The emissions generated by these gas-fired power plants offset by potential VCIP projects would be approximately 223 times greater than emissions under the VCIP. As such, the VCIP would generate substantial environmental benefits related to GHG emissions reductions.

The Reduced Project Size Alternative would involve lower overall levels of renewable energy infrastructure development, and thus would result in lower overall emissions of GHGs during construction, operation, and decommissioning. During its lifetime, this alternative would emit a total of approximately 1,104,671 MTCO₂e, whereas the VCIP would emit 2,086,601 MTCO₂e (Table 4.6-1 of this PEIR). However, the lower levels of renewable energy generation and storage under the Reduced Project Size Alternative (i.e., 10,000 MW less than the VCIP) would result in a less substantial net offset of fossil fuel consumption. Specifically, once fully operational, the Reduced Project Size Alternative would represent an annual net reduction of approximately 7,050,879 MTCO₂e/yr, whereas the annual net reduction under the VCIP would be 13,401,152 MTCO₂e/yr once fully operational. Thus, VCIP renewable development would result in a greater net avoidance of GHG emissions overall and would therefore have a greater beneficial effect in terms of reducing the effects of global warming, relative to the Reduced Project Size Alternative. Therefore, selecting the Reduced Project Size Alternative instead of the VCIP would result in greater impacts relative to GHG emissions than the planned VCIP energy development.

Hazards and Hazardous Materials. During construction, operation, and decommissioning, the potential VCIP energy projects would involve the use of various fuels and materials which are classified as hazardous materials. However, hazardous materials management plans and response plans would be required for each solar/BESS facility and would be implemented in case of accidental spill or unauthorized release of hazardous materials, resulting in a less-than-significant hazardous materials impact. For the VCIP projects, the potential for residual contamination from previous agricultural and petroleum industry operations within each project site would be investigated and remediated as appropriate. By temporarily repurposing farmlands, which have a greater overall potential for release of hazardous materials during farming operations compared to implementation of the VCIP, it is anticipated that the VCIP would have environmentally beneficial effects. Other potential hazards, such as development in proximity to oil and gas wells, safety hazards associated with existing fuel pipelines and electrical transmission lines, fire hazards from BESS, potential exposure to valley fever, potential exposure to EMFs from VCIP transmission and gen-tie lines, photo-voltaic heat island effects, or hazards to aviation, would all be less than significant or reduced to less than significant by mitigation measures identified in this PEIR. Thus, the potential impacts due to hazards or hazardous materials associated with implementing the proposed VCIP would be reduced to less-than-significant levels (see Section 4.9. *Hazards and Hazardous Materials*).

Under the Reduced Project Size Alternative, the lands that would be developed for renewable energy and related infrastructure would be subject to the same conditions and requirements as addressed above for VCIP implementation. Since the Reduced Project Size Alternative would involve relatively less development overall, the potential for hazards and hazardous materials impacts to occur during construction, operation, and decommissioning would be lower than for VCIP implementation. However, given the Reduced Project Size Alternative's smaller scale, there would be more acreage requiring historic agricultural management activities (e.g., cultivation, disking, and managing fallowed fields). While more farmland would potentially be available for cultivation under the Reduced Project Size Alternative, much of this additional farmland would likely be fallowed (which still requires disking and weed management) and/or dry farmed due to chronic water supply constraints, {AM0015.1}

there would be greater overall potential for soil and groundwater contamination from agricultural operations. While the potential for site contamination is low for pesticide contamination given that agricultural operations would handle and utilize agricultural chemicals in a safe manner as directed in manufacturers' specifications, there is always the risk of uncontrolled leaks and spills of agricultural chemicals and fuels. As such, this alternative would result in greater potential hazardous materials impacts, and generate fewer and less substantial environmental benefits than the VCIP, given the overall greater potential for releases of hazardous materials associated with farming operations compared to renewable energy facilities. Therefore, a greater risk of hazardous material contamination with farming operations would remain under the Reduced Project Size Alternative, relative to VCIP implementation.

In summary, the potential for hazardous materials impacts is low for implementation of the proposed VCIP and for the Reduced Project Size Alternative, with no reliably forecasted difference between them in terms of impact level. Thus, the Reduced Project Size Alternative would result in similar potential hazardous materials impacts compared to VCIP implementation.

Hydrology and Water Quality: Regarding erosion, sedimentation and runoff, VCIP implementation 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 construction and decommissioning would be minimized through standard erosion control measures, as required (see Section 4.10. *Hydrology and Water Quality*). The Reduced Project Size Alternative would result in less overall development in the Plan Area, and thus would have less potential to result in hydrology and water quality impacts. Therefore, the Reduced Project Size Alternative would result in a lower level of hydrology and water quality impacts than VCIP implementation, although the impact would be less than significant in both cases.

Regarding consistency with implementation of a sustainable groundwater management plan, the VCIP would be implemented as an agricultural repurposing program pursuant to the Westside Subbasin GSP. As discussed in Section 4.10. *Hydrology and Water Quality*, the GSP identifies the VCIP as a potential groundwater management action that would promote the Subbasin's long-term groundwater sustainability. The Reduced Project Size Alternative would also be implemented as an agricultural repurposing program pursuant to the GSP. However, compared to the VCIP, the Reduced Project Size Alternative would be less effective as a groundwater sustainability management action for two reasons. First, implementation of the Reduced Project Size Alternative would result in groundwater sustainability management actions being conducted on substantially fewer acres. Second, the Reduced Project Size Alternative would only include District-owned lands that do not use groundwater and are not eligible for a groundwater allocation pursuant to the GSP and Article 1 of the District's Rules and Regulations. In fact, groundwater rights associated with District-owned lands were re-allocated to privately owned eligible land. In contrast, implementation of the VCIP would more effectively implement the GSP by repurposing privately-owned lands that have historically used groundwater and are eligible for a groundwater allocation. Thus, because the Reduced Project Size Alternative would not implement the GSP on 64,000 acres of privately-owned lands, selecting the Reduced Project Size Alternative instead of the VCIP would result in a greater potential for conflicts with the GSP on these privately owned lands.

In sum, the results would be mixed, as the Reduced Project Size Alternative would result in lower level impacts related to erosion, sedimentation, and runoff than VCIP implementation, whereas the VCIP would more effectively advance SGMA implementation and promote groundwater sustainability.

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Land Use and Planning: As discussed in Section 4.11. *Land Use and Planning*, VCIP implementation would be consistent with all applicable plans, policies and regulations, and thus would have no impact in this regard. Under the Reduced Project Size Alternative, all proposed development would be required to be consistent with applicable plans, policies, and regulations to receive project approval. As such, there would be no land use and planning impact associated with the Reduced Project Size Alternative. Therefore, the level of impact under the Reduced Project Size Alternative would be same as the impact under VCIP.

Mineral Resources: As discussed in Section 4.12. *Mineral Resources*, the only mineral resource sites within the Plan Area are a few exploratory oil wells which are not near any contemplated VCIP facilities. Thus, the impact of VCIP implementation on mineral resources would be less than significant. Similarly, the Reduced Project Size Alternative would be unlikely to have an impact on these few mineral resource sites since there are no facilities near the exploratory wells under this alternative. Therefore, the impact of the Reduced Project Size Alternative would be similar to the impact of VCIP implementation with regard to mineral resources.

Noise: VCIP implementation would result in increased noise from construction and decommissioning, as well as increased traffic noise along roadways used for truck deliveries and commuter trips by construction workers, although the noise impacts from these construction-related activities would be temporary and less than significant. Once completed, the noise from the operation of VCIP facilities would be mitigated by the application of required setbacks and other measures to ensure that operating equipment noise reaching sensitive receptors meets applicable noise standards (see Section 4.13. *Noise*). Under the Reduced Project Size Alternative, the construction noise from individual projects would also be temporary and less than significant, and the operational noise would also be subject to mitigation. However, less development would also occur within the vicinity of sensitive noise receptors. For example, the VCIP would include portions of three DFAs within one mile of the Cantua Creek community, which contains the highest concentration of sensitive noise receptors in the VCIP DFAs. Under the Reduced Project Size Alternative, the nearest DFA would be located over one mile to the southwest on District-owned land and well away from the sensitive receptors in this community (see *Chapter 3. Environmental Setting*, Figure 3.1-5). Without the proposed solar/BESS development in the vicinity, there also would be no need for a potential gen-tie line to pass through the vicinity of Cantua Creek. Thus, under the Reduced Project Size Alternative, the potential noise generation would be less than under the VCIP (see Figure 4.13-2). Thus, the Reduced Project Size Alternative would result in a lower level of noise impacts than VCIP implementation, although the impacts would be less than significant in both cases after mitigation.

Public Services: The contemplated VCIP 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 4.14. *Public Services*). The Reduced Project Size Alternative would result in less overall development and therefore would generate relatively less demand for fire and police services. Thus, the Reduced Project Size Alternative would result in a lower level of public services impacts than the potential VCIP projects, although the impact would be less than significant in both cases.

Transportation: During the construction and decommissioning phases, the potential VCIP projects would generate commuter trips to and from their sites by construction workers, and truck trips for delivery of equipment and materials. Given the geographic concentration of potential development associated with the proposed VCIP, especially in the early years, the VCIP traffic would result in potential LOS impacts. However, these impacts would be mitigated by required trip reduction measures, which would also result in substantial reductions in VMT. During project operations, the small amount of operations and maintenance staff would generate minimal traffic, which would be well below VMT screening levels (see Section 4.15. *Transportation*).

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The Reduced Project Size Alternative would result in less overall development. While the overall phasing plan would likely be similar to the VCIP phasing plan, the overall development would be less in any given year. Thus, the traffic volumes on any given roadway would be lower under the Reduced Project Size Alternative.

Construction VMT would also likely be lower under the Reduced Project Size Alternative, although this would be somewhat offset by the greater relative reductions in VMT under the VCIP resulting from the more substantial trip reduction measures that would be required for VCIP relative to this alternative. On balance, the Reduced Project Size Alternative would generally result in a lower level of traffic impacts than VCIP implementation, although the impact would be less than significant in both cases.

Utilities and Service Systems: The VCIP facilities would require water supply, wastewater disposal, and solid waste disposal (see Section 4.17. *Utilities and Service Systems*). The VCIP's impacts on these utilities and service systems are summarized below, in comparison with the Reduced Project Size Alternative.

Water Supply

As discussed in detail above, the potential VCIP projects would require water supply during both the construction and operational phases. Operational water demands would include water for periodic panel washing and general maintenance and cleaning. It is estimated that operational water requirements would average 0.004 acre-feet per acre per year. As discussed in Section 4.17. *Utilities and Service Systems* and Appendix F of this PEIR, the sources available to VCIP projects on District-owned lands would be available to projects under the Reduced Project Size Alternative. Specifically, construction water would be obtained from groundwater sources by purchasing groundwater credits via District-approved transfers. The District would provide operational municipal and industrial (M&I) water from the District's CVP contract supplies pursuant to Article 19 of the District's Rules and Regulation to projects on District-owned lands. Regarding potable water demands, bottled water would be provided during construction, and municipal water would be delivered by truck to on-site tanks during operations.

The proposed VCIP and the Reduced Project Size Alternative would have similar effects related to water supply and would not significantly affect overall water supplies within the District compared to existing conditions. Due to its smaller size, implementation of the Reduced Project Size Alternative would require approximately half the amount of water for construction and maintenance activities compared to the VCIP. Implementation of the Reduced Project Size Alternative would require the use of water on District-owned lands that currently receive no water supply (i.e., are unirrigated). But the quantities required would be insubstantial and the use of such water would be consistent with the District's Rules and Regulations and the GSP. As such, like implementation of the proposed VCIP, the use of water associated with the Reduced Project Size Alternative would result in an insubstantial reduction in water supply that would otherwise go to crop irrigation on private lands. This conclusion is supported by the short-term nature of construction (10 years) and decommissioning, in addition to the very minor water requirements for operational uses over the anticipated 35-year operational period.

Under the Reduced Project Size Alternative, projects would not occur on 64,000 acres of privately owned land, which would remain available for irrigated agricultural cultivation. As such, while the VCIP facilities would require more water compared to those associated with the Reduced Project Size Alternative, the long-term but temporary repurposing of privately owned lands under the VCIP would facilitate the redirection of scarce water resources to farmlands with the most pressing needs. Thus, while the VCIP would more effectively advance the District's project objectives related to water supply, both the Reduced Project Size Alternative and the VCIP would result in insubstantial changes to the overall amount of water available for irrigation under

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existing conditions. Apart from forgoing the opportunity to implement agricultural land repurposing projects pursuant to the GSP on 64,000 acres of privately-owned land, selecting the Reduced Project Size Alternative would have no impact on achieving groundwater sustainability in the District. Therefore, implementation of the Reduced Project Size Alternative would have a similar impact on overall water supply relative to what would occur under VCIP implementation.

Wastewater

The wastewater disposal for the potential VCIP projects would be provided by portable chemical toilets during construction and decommissioning, with off-site disposal by sanitary contractors. During facility operation, wastewater disposal and treatment would be provided by onsite septic systems, which would be designed in accordance with County requirements to avoid impacts to groundwater. Under the Reduced Project Size Alternative, wastewater treatment and disposal would be handled in the same way as for VCIP projects. However, since less overall development would occur under the Reduced Project Size Alternative, the potential for wastewater impacts would be relatively lower. Therefore, the Reduced Project Size Alternative would result in a lower level of wastewater disposal impact than VCIP implementation, although impacts would be less than significant in either case.

Solid Waste

With implementation of the proposed VCIP, solid waste would be generated during construction, operation, and decommissioning. There are no constraints to solid waste collection, and there is sufficient landfill capacity to accommodate non-recyclable waste from the VCIP facilities, so the impact would be less than significant. Because less overall development would occur under the Reduced Project Size Alternative, there would be lower overall quantities of solid waste generation, compared to VCIP projects. Therefore, the Reduced Project Size Alternative would result in a lower level of potential solid waste disposal impact than VCIP implementation, although the impacts would be less than significant in either case.

Wildfire: As discussed in Section 4.18. *Wildfire*, none of the lands within the VCIP Plan Area are classified as Very High Fire Hazard Severity Zone, and VCIP implementation would have a less-than-significant impact regarding potential exposure of people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires. Since the Reduced Project Size Alternative would be located entirely within the VCIP Plan Area and similar renewable energy facilities would be developed, the potential wildfire impacts under this alternative would be similar and less than significant.

In summary, the Reduced Project Size Alternative would result in lower levels of impact than VCIP implementation 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 agricultural resources, biological resources, cultural and tribal cultural resources, geology, soils and paleontology, noise, public services, transportation, wastewater disposal, and solid waste disposal, although all these impacts would be less than significant or fully mitigable with VCIP implementation. Compared to implementation of the proposed VCIP, selection of the Reduced Project Size Alternative would result in greater levels of impact in the categories of air quality, energy, and GHG emissions, and similar levels of impact to VCIP solar development in terms of hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, water supply, and wildfire. In addition, while VCIP implementation would result in significant and unavoidable impacts relative to aesthetics and agricultural resources, the Reduced Project Size Alternative would also result in significant and unavoidable impacts related to aesthetics and agricultural resources, although the overall visual impact would be less relative to VCIP implementation.

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On balance, the proposed VCIP represents an environmentally superior alternative to implementation of the Reduced Project Size Alternative. Almost all the VCIP's potential impacts are either less than significant or can be avoided or substantially reduced to less-than-significant levels through implementation of mitigation measures. In these impact categories, the Reduced Project Size Alternative would not avoid or substantially lessen any of the VCIP's significant effects because they would be avoided or fully mitigated under VCIP implementation. Likewise, under both the VCIP and the Reduced Project Size Alternative, implementation would result in significant and unavoidable impacts related to aesthetics and agricultural resources. As such, their effects upon aesthetics and agricultural resources would be substantially similar. Overall, the proposed VCIP and the Reduced Project Size Alternative would result in substantially similar effects across most impact categories. However, in terms of their respective merits, the proposed VCIP would result in substantially greater environmentally beneficial effects related to renewable energy generation and storage (i.e., 21,000 MW capacity versus 11,000 MW capacity), which would offset substantially more GHG emissions associated with the consumption of fossil fuel to produce electricity. Thus, while the proposed VCIP and the Reduced Project Size Alternative are generally similar from an impacts perspective, the VCIP's substantially greater environmental benefits make the proposed VCIP environmentally superior. Relatedly, the Reduced Project Size Alternative would not go as far as the VCIP in fulfilling the basic project objectives of the VCIP, as restated at the beginning of this chapter, particularly the objectives related to water supply, facilitating SGMA implementation, and helping to meet the state's renewable energy and GHG reduction targets through repurposing farmland affected by water supply constraints for the generation of fossil-free sources of electricity. (See Section 6.7.3. for detailed discussion of the environmentally superior alternative.)

6.3.3. Comparison of the VCIP and its Alternatives

The foregoing analysis of comparative impacts between the VCIP and the project alternatives is summarized in Table 6.3-1 (see below).

The No Project Alternative would result in somewhat lower impacts in several categories, and similar levels of impact in other categories relative to implementation of the proposed VCIP. However, if selected instead of the VCIP, the No Project Alternative would result in greater impacts in several categories, such as air quality, energy, GHG emissions, and water supply because the VCIP would generate environmental benefits in these impact areas. Moreover, the No Project Alternative would not reduce the significant and unavoidable aesthetic impacts of VCIP implementation to less than significant. The No Project Alternative would also fail to satisfy many of the project objectives, unlike the proposed VCIP which would satisfy every project objective. Therefore, the No Project Alternative would not represent an environmentally superior alternative to the implementation of the proposed VCIP. Moreover, the No Project Alternative would not go as far as the VCIP in fulfilling the basic project objectives, as restated at the beginning of this chapter, particularly the objectives of achieving sustainable groundwater supplies in the District, and helping to meet the state's renewable energy and GHG reduction targets through repurposing of less productive farmland for the generation of fossil-free sources of electricity.

The Reduced Project Size Alternative would result in somewhat lower levels of impact under several categories, and similar levels of impact in other categories relative to implementation of the proposed VCIP. However, as provided above, in most of these categories, the impacts associated with implementation of the proposed VCIP would already be less-than-significant. Additionally, selecting the Reduced Project Size Alternative instead of the VCIP would diminish key environmental benefits provided by the VCIP regarding energy, GHG emissions, and water supply. Moreover, the Reduced Project Size Alternative would not eliminate the significant and unavoidable aesthetic and agricultural impacts of VCIP implementation to less than significant.

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TABLE 6.3-1**SUMMARY COMPARISON OF VCIP IMPLEMENTATION WITH PROJECT ALTERNATIVES**

Impact Category	Level of Impacts		
	VCIP	Impacts of Compared	Alternatives to VCIP
		No Project Alternative	Reduced Project Size Alternative
Aesthetics	Significant & Unavoidable (SU)	Lower/SU*	Lower/SU*
Air Quality	Less than Significant	Greater	Greater
Agriculture & Forestry Resources	Significant & Unavoidable (SU)	Lower/SU*	Lower/SU*
Biological Resources	Less than Significant	Lower	Lower
Cultural & Tribal Cultural Resources	Less than Significant	Lower	Lower
Energy	Less than Significant	Greater	Greater
Geology, Soils, & Paleontology	Less than Significant	Lower	Lower
Greenhouse Gas Emissions	Less than Significant	Greater	Greater
Hazards & Hazardous Materials	Less than Significant	Similar	Similar
Hydrology & Water Quality	Less than Significant	Lower	Similar
Land Use & Planning	No Impact	Similar	Similar
Mineral Resources	Less than Significant	Similar	Similar
Noise	Less than Significant	Lower	Lower
Public Services	Less than Significant	Lower	Lower
Transportation	Less than Significant	Lower	Lower
Utilities & Service Systems	Less than Significant	Mixed	Mixed
Wildfire	Less than Significant	Similar	Similar
Environmentally Superior Alternative?	Yes	No	No

* The impact under the alternatives would remain Significant and Unavoidable.

** The Reduced Project Size Alternative would substantially reduce the VCIP's significant effects associated with aesthetics by virtue of its smaller size, but it would not reduce the aesthetic impact to less than significant. However, compared to the VCIP, the Reduced Project Size Alternative would provide fewer and less substantial environmental benefits regarding energy, GHG emissions reductions, and water resources. Therefore, selecting the Reduced Project Size Alternative instead of the VCIP would result in comparatively significant adverse effects in these impact categories.

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The Reduced Project Size Alternative would also fail to satisfy many of the project objectives, unlike the proposed VCIP which would satisfy every project objective. On balance, the Reduced Project Size Alternative would not be the environmentally superior alternative because, while it would result in generally lower levels of impact in most categories compared to implementation of the proposed VCIP, it would not provide full environmental benefits from implementation of the VCIP as proposed. In particular, the Reduced Project Size Alternative would not go as far as the proposed VCIP in meeting the objectives of related to water supply, facilitating SGMA implementation, and helping to meet the state’s renewable energy and GHG reduction targets through repurposing farmland affected by water supply constraints for the generation of fossil-free sources of electricity. (See detailed discussion at the end of this section.)

The Reduced Project Size Alternative would partially meet the basic objectives of the VCIP, but not fully. Specifically, the Reduced Project Size Alternative would not go as far as the VCIP in terms of contributing to the solution of reduced water supply reliability by promoting repurposing of farmland, of facilitating the redirection of scarce water resources to farmland with the most pressing needs, of facilitating SGMA implementation, and of helping meet the state’s renewable energy and GHG reduction targets. The ability to fully realize these goals is directly related to the scale of the proposed project. Because the Reduced Project Size Alternative would repurpose substantially fewer acres of land for the generation, storage, and transmission of fossil fuel-free sources of electricity, it would only partially meet the following objectives:

- Utilize the District’s location, topography, and excellent insolation (solar radiation energy) attributes to promote the siting of solar generation, storage, and transmission of renewable energy, in furtherance of federal, state, and local renewable energy and carbon reduction goals over the next 25 years.
- Contribute to the solution regarding the problem of reduced reliability of water supplies by providing productive long-term but temporary repurposing of those lands from irrigated agriculture and for renewable energy production.
- Facilitate SGMA implementation.
- Constructively address the chronic shortage of surface water deliveries by promoting repurposing of farmland and by facilitating the redirection of scarce surface water allocations to other productive agricultural land within the District.
- Promote expeditious and efficient repurposing of farmlands through a comprehensive planning process to address transmission capacity constraints affecting further incremental clean energy development in the District.
- 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).
- Contribute to overall reduction in greenhouse gas emissions by generating electricity that is not based on the combustion of fossil fuel and provide new sources of energy storage that support the state in achieving its renewable energy and carbon neutrality targets.
- Positively contribute to the local economy and provide community benefits.

In conclusion, there are no environmentally superior alternatives to implementation of the proposed VCIP that would go as far as the proposed VCIP in meeting the project objectives. In particular:

- VCIP implementation would result in the capacity to generate and store 21,000 MW of clean energy, compared with approximately 11,000 MW of clean energy under the Reduced Project Size Alternative, {AM0015.1}

which would not take full advantage of the opportunity for reducing the state’s dependence on fossil-fueled generation and associated greenhouse gas emissions;

- VCIP implementation would facilitate the redirection of water allocations from 64,000 acres of private lands to other farmlands in the District thus enhancing the agricultural productivity within the District’s overall farming unit(s) and facilitating the redirection of scarce water resources to farmlands with the most pressing needs, while the Reduced Project Size Alternative would not facilitate any such redirection of water allocations because it would only include unirrigated District-owned lands;
- The VCIP would be implemented as an agricultural land repurposing program pursuant to the GSP and would temporarily repurpose 64,000 acres of irrigable farmland for renewable energy facilities that would require insubstantial quantities of water, advance the GSP and the purpose of SGMA in improving overall water supply reliability and avoiding undesirable results, and would preserve economic opportunities for growers and the communities, whereas the Reduced Project Size Alternative would repurpose no irrigable farmland and thus would not effectively facilitate SGMA implementation;
- VCIP implementation would maximize the District’s location, topography, and excellent solar insolation attributes to promote solar generation, storage, and transmission facilities on highly disturbed lands that provide minimal habitat value for wildlife and are impacted by chronic water supply constraints, whereas the Reduced Project Size Alternative would represent a decision to utilize approximately half of this available potential;
- VCIP implementation would maximize the potential to convey renewable energy generated and stored by potential VCIP projects by providing a complete power collection and transmission system for transferring VCIP generation to the state’s electrical grid, while the Reduced Project Size Alternative would provide a reduced collection and transmission system which would utilize less than the full generation potential of VCIP implementation;
- VCIP implementation would maximize the opportunity to contribute positively to the local economy and provide community benefits, while the Reduced Project Size Alternative would provide substantially less economic and community benefits.

6.3.5. Alternatives to the VCIP Considered but Not Included in Detailed Alternatives Analysis

While 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 during this analysis are identified below, along with brief explanations as to why they were not carried forward for detailed analysis.

Reduced Project Size Alternative Which Includes Only Privately-Owned DFA Lands

This alternative represents the opposite of the Reduced-Size Project Alternative evaluated above, which considers only District-owned lands for VCIP development. This alternative would include all of the approximately 64,000 acres of privately-owned DFA lands in the Plan Area (see Figure 2.2-1). Under this alternative the backbone transmission corridor would be realigned westward to be more centrally located {AM0015.1}

relative to the DFA lands, and would likely run just east of the San Luis Canal/California Aqueduct. Since the private DFA lands tend to be widely dispersed, with few areas of concentration, the collection of solar generation from these sites would involve an inefficient and disorderly system of gen-tie lines conveying power to the collection substations compared to the proposed VCIP. Under the proposed VCIP, Substations 1, 2, 3, and 4 would be located on District-owned lands, with the DFAs generally concentrated around these substations (see Section 3. *Environmental Setting*). The DFAs in the vicinity of Substations 1, 2, and 4 primarily consist of District-owned lands, with the privately-owned lands largely supplemental. Under the proposed VCIP, the contemplated internal transmissions lines are also expected to traverse District-owned land to the greatest extent feasible. As such, while the five substations and connecting transmission lines would remain (albeit at approximately half of their planned capacities and sizes) under the District-owned Reduced Project Size Alternative, the same would likely not be feasible under an alternative that solely consists of privately owned lands. Thus, due to the dispersed nature of the privately owned lands included in the DFAs and the substantial reliance on District-owned lands for the location of key facilities and infrastructure, it would not be feasible to implement the VCIP at a reduced scale on the privately owned lands identified within the VCIP DFAs.

As is the case with the proposed VCIP, the overall aesthetic impact of this alternative would be significant and unavoidable. Similarly, this alternative would also necessitate the location of the southern collection substation on Prime Farmland, and thus would not avoid the significant and unavoidable impact of permanent conversion of up to 60 acres of Farmland for the substation. Analysis of the FMMP mapping indicated that the vast majority of the lands in the central and western portions of the Plan Area, including almost all of the DFA lands that are not owned by the District, are mapped as either Prime Farmland or Farmland of Statewide Importance, both of which are defined as Farmland under CEQA. As such, locating Substations 1, 2, and 4 on privately owned lands would likely result in the permanent conversion of additional Farmland. As such, this alternative would not be capable of avoiding or substantially lessening the significant effects of VCIP implementation and would likely result in additional significant and unavoidable impacts. In addition to not going as far as the proposed VCIP in meeting all of the project objections for the reasons provided above and in the analysis of the Reduced Project Size Alternative with District-owned lands, this alternative would not meet one of the District's primary project objectives: to "[p]rovide utility-scale power generation on farmland that has been fallowed or removed from irrigated agriculture due to lack of a reliable surface water supply, which reduces pressure to develop renewable energy on prime agricultural land elsewhere." This objective would not be met because an alternative that only consists of privately owned lands would not include lands permanently removed from irrigated agriculture, which are generally located along the eastern Plan Area and include a substantial amount of the lands identified in the proposed DFAs under the VCIP.

Therefore, this alternative was not retained for detailed analysis.

Alternative Project Location for the VCIP

An alternative site to the VCIP would need to support the generation of 21,000 MW of renewable energy on approximately 136,000 acres of non-urbanized land suitable for these activities and within the District's boundaries. A suitable alternative site would need to include large expanses of contiguous or proximate lands capable of being developed for utility-scale solar and BESS facilities, and capable of being efficiently served by a comprehensive power collection and transmission delivery system. The Plan Area is the only area within the District's boundaries sufficient to support this amount of renewable energy generation. The Kings County portion of the District's service area is not a suitable project location because it is approximately 78,900 acres, and the implementation of solar projects there are already covered by the Westlands Solar Park Master Plan which is currently being implemented.

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In fact, the only area in the state that would satisfy the VCIP's project site requirements is the California desert region in the southeastern portion of the state. However, this desert area is already covered by a comprehensive plan for renewable energy and infrastructure development, known as the Desert Renewable Energy Conservation Plan (DRECP), which is a multi-agency planning document between the California Energy Commission, California Department of Fish and Wildlife, the U.S. Bureau of Land Management (BLM), and the U.S. Fish and Wildlife Service. It provides for the comprehensive development of 20,000 MW of renewable energy generation. The DRECP is focused on 10.8 million acres of public lands in the desert regions of Imperial, Inyo, Kern, Los Angeles, Riverside, San Bernardino, and San Diego Counties and has a total plan area of 22.5 million acres (US BLM 2025a). In 2016, BLM signed its Record of Decision approving the DRECP pursuant to the National Environmental Policy Act (US BLM 2025b, CEC 2025). Since the implementation of both the VCIP and DRECP would be needed to achieve the state's renewables development and GHG reduction targets, the DRECP would not be considered a substitute for the VCIP. Given also that DRECP is established as an environmentally approved master plan for renewable development in the California desert, consideration of the desert as an alternative location for the VCIP would be redundant and unnecessary for this PEIR. In summary, since there are no suitable alternative sites available, the "Alternative Project Location for the VCIP" was not included in the detailed alternatives analysis.

Alternative Location for VCIP Collection Substation No. 5

As discussed in Section 4.2. *Agriculture and Forestry Resources*, under Impact AG-1, the VCIP Infrastructure Plan includes the construction of a collection substation on approximately 60 acres near the junction of SR-198 and SR-269 in the southern portion of the Plan Area. The substation site is mapped as Prime Farmland by CDOC's Farmland Mapping and Monitoring Program (FMMP), and the use of the site for the substation would constitute a permanent conversion of Farmland, a significant impact under CEQA. Unless exempted by Fresno County pursuant to General Plan Policy LU-A.23, this conversion could be partially mitigated by preservation of Farmland elsewhere through conservation easements or similar measures. If agricultural mitigation is required at the project-level, this would not provide full mitigation for Farmland conversion to a less-than-significant level. Therefore, the impact to Farmland would be significant and unavoidable. As such, CEQA requires consideration of whether there is a feasible alternative to the project or its location that would be capable of avoiding or substantially lessening its significant impact related to agricultural resources. Specifically, this alternatives analysis considers whether there is a feasible alternative site for VCIP Substation No. 5 that does not result in permanent conversion of Farmland while being capable of meeting most of the District's project objectives.

The screening analysis for alternative sites for Substation No. 5 focused on lands in the vicinity of the proposed substation site that are not mapped as Farmland and that are included in a VCIP DFA, either as District-owned land or privately owned land. To be feasible, the alternative site would need to comprise at least 60 contiguous acres and be located within a reasonable distance of the currently proposed Substation No. 5 site so that it could effectively serve the DFAs in its service area in the southern portion of the Plan Area. An alternative substation site also would need to be separated from the proposed site for Substation No. 4, located 12 miles north, to avoid substantial encroachment upon the service/collection area of Substation No. 4. Based on these considerations, the maximum reasonable search radius was considered to be about eight miles from the proposed site of Substation No. 5, a distance which extends to the east and west boundaries of the Plan Area and also provides a separation of about four miles from the proposed Substation No. 4 site. This search area encompasses 200 square miles (128,000 acres), including approximately 12,000 acres within DFAs, all of which are privately owned.

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Analysis of the FMMP mapping indicated that the vast majority of the lands in the search area, including all of the DFA lands, are mapped as either Prime Farmland or Farmland of Statewide Importance, both of which are defined as Farmland under CEQA. The lands that are not mapped as Farmland include the City of Huron and its nearby detention basin and recharge facility, the Harris Ranch complex, several solar facilities, and various ranch complexes and agricultural processing facilities. Since all of the DFA lands within the eight-mile search radius are mapped as Farmland by the FMMP, the selection of an alternative site on any one of these DFA parcels would result in permanent conversion of Farmland, and thus would not be capable of avoiding or substantially lessening the significant effects of the project to Farmland resulting from construction of Substation No. 5 at its proposed location. The potential location of Substation No. 5 at a site outside the eight-mile search radius would not be feasible because a substation at that distance would be too far from the DFAs it is intended to serve in the southern portion the Plan Area, resulting in gen-tie lines that would extend too far from the substation to effectively serve the solar and BESS facilities within its service area. Since no feasible alternative sites for the location of Substation No. 5 were identified in the screening analysis, this alternative was not retained 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. Overall land requirements per MWh for thermal solar are similar to photovoltaic (PV) solar (NREL 2013). These processes all involve cooling cycles, which can be largely accomplished by fans (dry cooling) although some volume of water is still required in the cooling process. If dry cooled, the generating efficiency of thermal solar facilities would be reduced by 5-10 percent, making them less efficient than PV solar facilities (Nexus 2016). In addition, the energy requirements of the fans reduce the overall generating output of the associated power plant.

Thermal solar technologies were not considered as viable options for the VCIP for several reasons. First, thermal solar facilities require a minimum solar resource value (insolation) of 6.0 kWh/M²/day, and optimally 7.0 kWh/M²/day or greater, which is available in the Mojave Desert (NREL 2015). In contrast, Fresno County has a solar resource value of 5.0-5.5 kWh/M²/day, which is sufficient for PV solar but less than the minimum requirement for thermal solar (NREL 2018). As such, due to the Plan Area's environmental factors (i.e., inadequate minimum solar resource value), CSP technologies are not feasible alternatives.

Second, CSP technologies are infeasible because of the lack of water available for their operation and maintenance. The water requirements for CSP technologies would be approximately 0.0936 acre-feet per year per acre (afy/ac), which includes 0.0624 afy/ac for dry cooling, and 0.0312 afy/ac for mirror washing (NREL 2015). In sum, these water requirements would amount to 15 acre-feet per 160 acres, which would greatly exceed the District's water allowance for solar facilities on District-owned land of 5 acre-feet per 160 acres per year (WWD 2023b). As the VCIP's contemplated PV facilities would require substantially less water for renewable electricity generation, selecting a CSP technology would be inconsistent with the District's duty to put water to beneficial uses to the fullest extent of which they are capable. It would also be inconsistent with the VCIP's goals of redirecting scarce surface water allocations to other productive agricultural land within the District and facilitating SGMA implementation. As such, this alternative is not feasible due to environmental, legal, economic, and technological factors.

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Third, combined with the relatively large capital costs involved in bringing solar thermal facilities online, the lower generating efficiencies (i.e., 10 percent less efficient than PV facilities) would necessitate pricing levels that would not be competitive with solar PV at the VCIP site, particularly since PV installation costs have dropped much more than thermal power installation costs over the past 15 years. Consequently, such an alternative is not feasible after considering relevant economic factors.

Fourth, in addition, to their greater impacts upon water resources, 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 biological resources (i.e., 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, suggesting that any substantial development of solar power tower facilities at the VCIP site would involve numerous towers with substantial glare and biological impacts. 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 with the planned VCIP solar facilities. Considering also that this alternative is not feasible in Fresno County, due to inadequate solar insolation as discussed above, this alternative was not evaluated further.

Finally, whereas the District is authorized to provide, generate, and deliver solar PV electricity and to construct, operate, and maintain works, improvements, and property necessary or convenient for generating and delivering that electricity, the District's authority does not include thermal solar using CSP technologies (Wat. Code, section 37860(b), (c)). This further demonstrates the legal infeasibility of a CSP alternative.

Green Hydrogen

Hydrogen has an important role in decarbonizing sectors which require large-scale energy inputs that cannot be readily provided by renewable electricity. Examples include long-haul transportation, heavy industry, shipping, and aviation. The principal means of producing hydrogen fuel are by reforming natural gas or by electrolysis of water powered by clean energy, with the latter referred to as "green hydrogen" because it represents a 100 percent renewable resource. Green hydrogen is produced by splitting water into its constituent hydrogen and oxygen elements through electrolysis, wherein 7 gallons of raw water (purified through reverse osmosis) and 50 kWh of electricity are required to produce one kg of hydrogen gas (NREL 2018). If a typical 250 MW solar facility (on 1,600 acres) was dedicated to hydrogen production, it would generate the electricity needed to produce approximately 25,000 kg of hydrogen gas per day (assuming an average of 5 hours of solar insolation per day, with no battery storage). It would require approximately 0.54 acre-feet of raw water to produce 25,000 kg of hydrogen gas per day.

Assuming 365 production days per year, a total of 197 AF/year would be consumed on the 1,600-acre site, not including operational water needed for solar facility maintenance and panel cleaning. The water demand rate of the hydrogen facility would be 0.123 afy/ac or 19.7 AF/160 ac/yr. For projects on District-owned land, this would exceed the District's water allowance for solar facilities of 5 acre-feet per 160 acres per year. For projects on private land, the project proponent would need to obtain operational water from the underlying landowner's allocations for groundwater and/or surface water. Otherwise, water could be purchased outside the District and conveyed to the project site via the District's water distribution system. In contrast, the annual water demand from the VCIP's contemplated solar/BESS operations would be approximately 0.004 afy/ac, or 3.3 percent of annual water demand for hydrogen production. Therefore, as it would require substantially less water to generate the same amount renewable energy (with equal storage capacity), a Green Hydrogen alternative would be inconsistent with the District's duty to put water to beneficial uses to the fullest extent of {AM0015.1}

which they are capable. It would also be inconsistent with the VCIP's goals of redirecting scarce surface water allocations to other productive agricultural land within the District and facilitating SGMA implementation. As such, this alternative is not feasible due to environmental, legal, economic, and technological factors. It would also result in greater environmental impacts.

Further, once produced, the green hydrogen would need to be delivered to market by truck or pipeline, with the latter involving substantial additional cost and additional potentially significant environmental impacts. The hydrogen gas could be converted to liquid form for less bulky transport, but this would involve freezing the hydrogen to near absolute zero which would require large volumes of additional water for condensers, which is expensive, and would consume 35 percent of the energy content of the hydrogen (NREL 2018).

Market factors are also an important consideration. Currently, the cost per mile for hydrogen gas is two times greater than the cost of gasoline, which raises a question of the current feasibility hydrogen fuel for transportation (Stillwater Assoc. 2022).

In summary, it is uncertain whether hydrogen production within VCIP would be economically feasible under current market conditions. In any event, hydrogen production would not currently represent a viable alternative for the generation of the equivalent of 21,000 MW of electricity. Therefore, this alternative was not evaluated further.

Finally, whereas the District is authorized to provide, generate, and deliver solar PV electricity and to construct, operate, and maintain works, improvements, and property necessary or convenient for generating and delivering that electricity, the District's authority does not include green hydrogen production (Wat. Code, section 37860(b), (c)). This further demonstrates the legal infeasibility of a green hydrogen alternative.

Other 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. The VCIP 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 hydroelectric generation. Cogeneration consists of capturing waste heat produced during thermal power generation; however, there are no residential, commercial, or industrial facilities in the VCIP 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 VCIP 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. 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

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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 basic project objectives because it would not provide for the generation of 21,000 MW of utility-scale renewable power within the Plan Area. Moreover, distributed generation by nature involves installation of small renewable generation facilities on numerous dispersed small sites with many owners, which is the opposite of the proposed VCIP, which involves the comprehensive development of proximate large sites with few owners. Therefore, the distributed generation alternative was not evaluated further.

Demand Management/Conservation

A demand management/conservation alternative would not feasibly accomplish the District’s most basic objectives. A demand management alternative would involve increased energy and water conservation and demand-side management instead of implementing the VCIP.

Regarding energy, this alternative would involve increased energy conservation and demand-side management within the utilities’ service areas instead of developing 21,000 MW of new generation within the Plan Area. 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 21,000 MW of new generation planned under the VCIP.

Regarding water supply, the District, which first authorized a water conservation program in 1972, is a world leader in water conservation. The District’s water distribution system is comprised entirely of pressurized, buried pipeline and is outfitted with over 3,000 water meters that measure every drop of water and minimize losses caused by seepage and evaporation. The District also has long encouraged farmers to deploy innovative irrigation methods that use the best available technology like micro-sprayers and drip irrigation to maximize every drop of water. Since the implementation of the District’s Expanded Irrigation System Improvement and Recharge Program (EISIP) in 1999, the District has funded over 500 irrigation system improvement loans. The District estimates approximately 219,750 af of water savings *annually* compared to 1985 due to the increase in water efficient irrigation methods. Due to this long history of water conservation, currently 90 percent of the District’s irrigable lands are in drip, which is 90 percent efficient in terms of water use. This contrasts sharply with the highly inefficient irrigation practices of the past, and the District has reached maximum feasible conservation. It is also not feasible for the District to control crop selection, which depends on grower choices based on market forces. The benefits of water-limited crops are difficult to leverage at the scale of the Plan Area and would require substantial continued research and development to be a reasonably feasible

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alternative. Water-limited crops also face uncertainties in both market conditions and production risks (e.g., potential increases in soil salinity with less irrigation and higher weed pressure with less weed management). In sum, water demand management/conservation is not considered a feasible alternative to meet the District's objectives related to water supply. It would also not advance the District's objectives related to promoting the siting of solar generation, storage, and transmission of renewable energy in furtherance of the state's renewable energy and carbon neutrality goals.

Therefore, the demand management/conservation alternative is not considered a feasible alternative and was not evaluated further.

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7. OTHER CEQA CONSIDERATIONS

7.1. SIGNIFICANT UNAVOIDABLE IMPACTS

Section 15126(b) of the CEQA Guidelines requires each EIR to identify “significant environmental effects which cannot be avoided if the proposed project is implemented.” This includes any impacts that remain significant, despite the implementation of feasible mitigation measures that lessen the extent of such impacts. Section 15126.2(c) provides that significant unavoidable impacts must be discussed as follows: “Describe any significant impacts, including those which can be mitigated but not reduced to a level of insignificance. Where there are impacts that cannot be alleviated without imposing an alternative design, their implications and the reasons why the project is being proposed, notwithstanding their effect, should be described.”

The significant unavoidable impacts associated with implementation of the proposed VCIP Energy Resource and Infrastructure Plans are discussed below.

As discussed throughout Section 4. *Environmental Impact Analysis* of this PEIR, all but two of the potential impacts associated with VCIP implementation would either be less than significant or can be avoided or reduced to less than significant through mitigation measures identified in this PEIR which are to be implemented at the project level. Implementation of the VCIP would result in significant and unavoidable impacts related to aesthetics and agricultural resources, as discussed below.

As described in Section 4.1 of this PEIR (*Aesthetics*), while the severity of aesthetic impacts would be reduced through implementation of feasible mitigation measures, they would not be reduced to a level less than significant. Specifically, Mitigation Measure AES-1 provides that at the project stage, the following measures will be required, as applicable:

- 1) For VCIP solar and energy storage projects located adjacent to public roadways: On the solar/energy storage project site, provide a 50-foot setback from the road right-of-way to the nearest project structure, not including fencing or internal driveways;
- 2) For residences with planned solar/energy storage projects located adjacent to any residential property line: On the solar/energy storage project site, provide a 50-foot setback from the adjacent residential property line(s) to the nearest project structure, not including fencing or internal driveways.

These measures would reduce the potential aesthetic impacts of VCIP implementation that would affect residential viewers, which typically have the highest sensitivity to visual changes. However, due to the overall scale of VCIP energy and infrastructure development, the aesthetic impact of VCIP implementation as a whole would be significant and unavoidable after mitigation. The aesthetic impact of any given VCIP project may be found to be less than significant, however, depending on that individual project’s circumstances.

As described in Section 4.2 of this PEIR (*Agriculture and Forestry Resources*), while permanent conversion of Farmland to non-agricultural uses would be avoided in the implementation of the VCIP, the construction of the proposed VCIP Substation No. 5 at its proposed location would result in the permanent conversion of up to 60

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acres of Prime Farmland. As discussed in Chapter 6. *Alternatives to the Proposed Project*, there are no feasible alternative sites available for Substation No. 5 which would be capable of avoiding or substantially reducing this potentially significant and unavoidable impact.

The analysis of cumulative impacts for each environmental topic addressed in Section 4. *Environmental Impact Analysis* found that, except for aesthetic impacts and impacts to agricultural resources, there are no other impacts associated with VCIP implementation which, when considered in combination with other cumulative projects, would result in a significant and unavoidable cumulative impact, as summarize below.

Implementation of the proposed VCIP would result in a significant and unavoidable cumulative aesthetics impact. The severity of this impact can be reduced with feasible mitigation measures but not to a level less than significant. Implementation of Mitigation Measure AES-1 (i.e., increased setbacks from existing residences) would reduce the impact for individual residences; however, considering the overall scale of the VCIP combined with other pending, approved, and completed development, the incremental contribution of VCIP projects would be cumulatively considerable and the cumulative aesthetic impact would be significant and unavoidable.

Implementation of the VCIP would result in a significant and unavoidable cumulative impact related to agricultural resources. The severity of this impact may be reduced with feasible mitigation measures, which would be applied in the discretion of Fresno County, but not to a level less than significant.¹ While implementation of Mitigation Measure AG-2 (i.e., acquisition of conservation easements or similar) would reduce the impact but not to a less-than-significant level, and combined with other pending, approved, and completed development, the incremental contribution of VCIP implementation would be cumulatively considerable and the cumulative impact related to agricultural resources would be significant and unavoidable.

As described in the Alternatives analysis contained in Chapter 6. *Alternatives to the Proposed Project* of this PEIR, it is not feasible to achieve the VCIP's project objectives and their associated environmentally beneficial effects without resulting in significant and unavoidable impacts related to aesthetics and agricultural resources. The VCIP's environmental benefits associated with generating renewable energy sources that would displace fossil fuel consumption in furtherance of the state's renewable energy and carbon neutrality targets, facilitating Sustainable Groundwater Management Act (SGMA) implementation, and promoting greater water supply reliability are all directly related to the VCIP's scale and the quantity of renewable energy that could be generated, stored, and dispatched to meet the needs of the state's major population centers. The Reduced Project Size Alternative, which would enable approximately 52 percent of the generation and storage capacity contemplated by the proposed VCIP, would substantially reduce the VCIP's significant effects associated with aesthetics by virtue of its smaller size. However, the overall aesthetic impact would still be significant and unavoidable, and the significant and unavoidable impact related to agricultural resources also would not be lessened under this alternative. Thus, it is not feasible to achieve the project objectives by imposing an alternative design. Additionally, as demonstrated in the Alternatives analysis, the proposed VCIP would result in significantly greater environmental benefits than the Reduced Project Alternative and the No Project Alternative due to the VCIP's substantially greater potential to generate renewable energy and offset fossil fuel-based generation. These distinct environmental benefits demonstrate that the VCIP is the

¹ As discussed in Section 4.2 *Agriculture and Forestry Resources*, at the project level Fresno County may consider implementation of the VCIP exempt from agricultural mitigation pursuant to Fresno County General Plan policy LU-A.23 because the VCIP would be implemented pursuant to the Westside Subbasin Groundwater Sustainability Plan and would provide numerous benefits that may be found, based upon substantial evidence, to outweigh the loss of agricultural land caused by the proposed conversion.

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environmentally superior alternative. Thus, due to its overall environmental benefits and ability to fully satisfy the project objectives, the VCIP is being proposed, notwithstanding its effects related to aesthetics and agricultural resources.

7.2. GROWTH-INDUCING EFFECTS OF THE PROPOSED PROJECT

CEQA Guidelines section 15126(d) requires each EIR to discuss the potential “growth-inducing impact of the proposed project.” Section 15126.2(e) of the CEQA Guidelines provides that the growth-inducing impact of a project shall 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 wastewater treatment plant might, for example, allow for more construction in service areas). Increases in the population may tax existing community service facilities, requiring 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 implementation of the VCIP Energy Resource and Infrastructure Plans are discussed below.

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 development of additional lands to the extent that surplus capacity is available in the lines.

VCIP development would not result in any off-site improvements to urban infrastructure (see Section 4.17. *Utilities and Service Systems*). The existing roadway network is sufficient to accommodate traffic generated during VCIP project construction and operation (see Section 4.16. *Transportation*). Operational water needs would be provided from existing agricultural water pipelines operated by the District or from groundwater pumped on-site (see Section 4.17. *Utilities and Service Systems* and Appendix F of this PEIR). All groundwater use would be governed by the Groundwater Sustainability Plan and Article 1 of the District’s Rules and Regulations, which would require a groundwater allocation or transfer of groundwater credits approved by the District and would require all groundwater to be used on-site. Any surface water deliveries to potential VCIP projects pursuant to Article 19 of the District’s Rules and Regulations would be strictly limited to use by solar facilities and limited to 5 acre-feet per 160 acres. These restrictions would preclude more intense land uses such as urban development. Therefore, the VCIP development would not induce growth through increased infrastructure capacities.

VCIP implementation would involve construction of supporting infrastructure such as gen-tie lines, collection substations, and connecting transmission lines to deliver the generated power to the electrical grid. This

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infrastructure would be sized to accommodate only the collection and delivery of electrical generation from potential VCIP solar and Battery Energy Storage System (BESS) facilities. There would be no surplus infrastructure capacity that could serve additional electrical generation beyond that planned under the VCIP. Therefore, the VCIP infrastructure elements 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 also indirectly increase pressure for similar land use changes that would authorize the conversion of adjacent or nearby lands.

Implementation of the VCIP Energy Resource and Infrastructure Plans is fully consistent with the current Fresno County General Plan and Ordinance Code, both of which permit utility-scale solar/BESS development on agricultural lands within the Plan Area with an Unclassified Conditional Use Permit (UCUP), subject to the County's Solar Facility Guidelines (see Section 4.11. *Land Use and Planning*)(Fresno County 2024b). Since no change in land uses or zoning designations is required for VCIP development, approval of the VCIP would not set a precedent which might indirectly increase pressures for conversion of other lands. While the Fresno County General Plan would allow for solar/BESS development on other agricultural lands within the County, the amount of solar development that will ultimately occur would be primarily limited by external factors such as transmission capacity in the state power grid. Also, since the terms of the land use permits issued for such projects would be limited by their lease terms under the County's Solar Facility Guidelines, such projects would represent temporary uses of the land (Fresno Co. 2017c). Any lands upon which potential VCIP projects are implemented would retain their existing agricultural character, as fundamental objectives of the VCIP are to promote the agricultural productivity of the overall farming units within the Plan Area and to facilitate SGMA implementation through long-term but temporary repurposing of lands included in the Development Focus Areas (DFAs). Therefore, the VCIP implementation 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 10-year VCIP buildout period, up to 6,000 workers would be engaged in the construction of the VCIP energy and infrastructure projects. Most solar components would originate from ports in northern and southern California. Most construction equipment would originate from the Fresno area, and materials such as aggregate and concrete would be supplied from local sources, as would the haul trucks and drivers that would deliver them. 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. The employment generated by the VCIP 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. 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 be limited since solar improvements, including BESS

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facilities, are exempt from property tax, at least through 2026 (California Rev. & Tax Code, § 73). The construction of VCIP projects would result in economic stimulus in the region during the 10-year buildout period. However, consistent with the VCIP's objective to provide community benefits through job creation and training programs for local residents, most of the construction workers are expected to be drawn from the existing labor pool in the region and equipment and materials would be procured from existing local businesses and vendors. Given the temporary nature of the economic stimulus from VCIP construction, it is expected that the increased demand would be absorbed by existing businesses without inducing formation of new businesses.

Upon full buildout of the VCIP, the solar/BESS facilities would include a total of approximately 800 permanent on-site operations staff plus about 400 occasional maintenance staff. This increase in permanent and part-time employment would occur incrementally as the VCIP facilities come online over the 10-year development period. Once fully operational, the energy and infrastructure facilities would require minimal materials or equipment. The economic stimulus resulting from VCIP facility operation would be relatively modest, resulting mainly from incremental employment growth, and would not be sufficient to induce additional growth in the region.

Population and Housing Growth

The potential VCIP energy and infrastructure facilities would not include residential components, so they would not directly induce population growth in the Plan Area or its vicinity. Non-residential 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 VCIP implementation, most employees would consist of construction workers. Given the high unemployment rate in Fresno County (i.e., 9.0% in Fresno County, and 8.5 to 11.4% in the surrounding valley counties as of March 2025)(EDD 2025a), and reduction in farming operations due to water shortages, it is expected that construction workers would be drawn from the local labor pool and that few workers would migrate to the area. Additionally, one of the VCIP's project objectives is to provide community benefits through job creation and training programs for local residents. For these reasons, it is expected that the permanent staff of each VCIP facility would almost entirely consist of existing residents in the area, although some specialized technical or supervisory personnel may transfer to the area if it is not feasible to hire locally. Thus, potential VCIP development may result in a slight increase in demand for housing locally. But this slight increase would be consistent with population projections contained in the 2024 Fresno County General Plan and other regional planning documents (see Section 4.14. *Population and Housing*). As discussed in Section 4.14. *Population and Housing*, the overall housing vacancy rate in the County was 5.8 percent in 2022, with the unincorporated areas having the highest vacancy rate at 12.2 percent, compared to vacancy rate of 3.8 percent in the City of Fresno, and vacancy rates ranging from 2.0 percent to 8.1 percent in other incorporated cities in the County (Fresno COG 2023). Based on 2020 census data, there were over 11,500 rental units on the market in the five counties surrounding the VCIP (i.e., within an approximately 50-mile radius of the Plan Area)(U.S. Census 2020). It is expected that the availability of rental housing will keep pace with regional growth to result in an adequate supply of rental units to meet any incremental demand resulting from VCIP development commencing in 2029. Therefore, little if any population and housing growth is anticipated to be induced by VCIP development.

As described in Section 4.14. *Population and Housing*, the potential for "unplanned" growth has long been avoided by the preparation and implementation of robust general plan documents at the county and local level. It is the purpose of all general plans to forecast community growth within the "planning horizon" (usually 20 years) and to designate areas to accommodate the anticipated land uses. A major purpose of city general plans is to define the urban limit line or planning boundary for the future growth planned in the General Plan. The {AM0008.1}

purpose of County general plans is to similarly define the limits of unincorporated communities within their jurisdiction. The objectives of both city and county general plans is to confine urban growth to existing urban areas and limit growth in rural areas. Because any growth would be required to be consistent with local general plans, as implemented through local zoning ordinances, of the surrounding counties and cities, no unplanned growth would occur and any impacts associated with insubstantial potential population and housing growth resulting from VCIP implementation would be less than significant.

Increased Power Generation

The VCIP solar facilities would add to the state's overall energy supply, which indirectly supports growth and development. However, the solar photo-voltaic (PV) generation from implementation of the VCIP is intended to help meet the state's renewable energy targets under the Renewable Portfolio Standard (RPS) by replacing fossil-fueled generation with renewable generation. As described in Section 4.6. *Energy* of this PEIR, fossil fuel energy sources account for approximately 43.8 percent of the state's power mix, whereas renewable energy sources account for approximately 35.5 percent. This disparity demonstrates the substantial need to replace existing fossil fuel generation with renewable sources like utility-scale solar and BESS to meet established targets. The proposed VCIP is not intended as a source of baseload power to meet increased electrical demand to support growth. Moreover, while outside the scope of the proposed VCIP, new electrical service using electricity generated by the VCIP could not be provided to a particular location until the relevant jurisdiction approves development at that location. Ongoing energy planning efforts at the state level by the California Independent System Operator (Cal ISO), the California Public Utilities Commission (CPUC), and the California Energy Commission (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 electrical grid are in place when needed to convey power from the generation facilities to the electricity users. Thus, while the generation capacity that would be added by VCIP solar facilities to the state grid may be growth accommodating, the added generation would not remove any infrastructure obstacle or constraint to growth and therefore would not be considered growth inducing.

In summary, VCIP development would have an insubstantial growth-inducing effect locally through direct employment of construction workers and operations staff by the solar facility operators, and through demand for goods and services. While implementation of the VCIP may result in minor population growth, this potential growth would be anticipated by the relevant land use plans and associated demands would keep pace with regional growth to result in an adequate supply of rental units to meet any incremental demand resulting from VCIP development, as discussed above and in Section 4.14. *Population and Housing*. The VCIP would not result in growth inducement by way of removing physical or regulatory obstacles to further growth, or through increased generation of baseload power. Accordingly, implementation of the VCIP Energy Resource and Infrastructure Plans would not have a significant growth-inducing effect.

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7.3. SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

This section was prepared pursuant to CEQA Guidelines section 15126(c), which requires a discussion of the significant irreversible changes that would result from implementation of a proposed project. CEQA Guidelines section 15126.2(d) provides that “[u]ses of nonrenewable resources during the initial and continued phases of the project may be irreversible since a large commitment of such resources makes removal or nonuse thereafter unlikely.” It further provides that primary impacts, and particularly secondary impacts such as providing transportation access to previously inaccessible areas generally commit future generations to similar uses. Section 15126.2(d) also provides that irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified. The potential significant irreversible environmental changes associated with VCIP implementation are discussed in turn below.

Use of Nonrenewable Resources

The construction phase for each VCIP facility would involve the use and consumption of nonrenewable building materials such as concrete, metals, and composites. Nonrenewable resources and energy would also be consumed in the manufacturing and delivery of solar and electrical components, the extraction, processing and hauling of building materials, transportation by workers to and from the site, as well as in grading and excavation. Operation of the potential VCIP projects would consume energy in the form of electricity 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 facilities, as well as maintenance vehicles used at each 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 of fossil-fueled generating stations elsewhere. These offsets would more than compensate for the inputs of non-renewable energy sources consumed in the construction and operation of the VCIP 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 VCIP solar facilities. Therefore, implementation of the VCIP Energy Resource and Infrastructure Plans would not result in a significant irretrievable commitment of nonrenewable resources.

Opening New Areas for Transportation Access

The potential VCIP facilities would all have entrances on existing state highways and county roads within the Plan Area. All VCIP facilities would have internal gravel access driveways for operations and maintenance. However, these driveways would only be available for internal access to the solar/BESS facilities and access to them would be restricted by entry gates and perimeter security fencing around each facility. Therefore, the VCIP facilities would not include the construction of public roadways or highways that could be used to provide public access to previously inaccessible areas. Thus, VCIP implementation would not result in indirect commitment of resources in the development of such previously inaccessible areas.

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Commitment of Future Generations to Similar Use

Each VCIP solar and BESS facility would have a productive life of about 35 years. At the end of 35 years, each facility would be decommissioned, and the soil would be reclaimed to a condition suitable for agricultural cultivation, in accordance with conditions of approval that would be placed on each facility, and as additionally required for privately-owned lands by Article 2 of the District's Rules and Regulations. Therefore, the implementation of solar and BESS projects on the VCIP DFAs for facilities would not commit future generations to solar PV or similar land uses.

The gen-tie lines that would be constructed to deliver electricity from the solar/BESS facilities to the collection substations would be expected to be decommissioned along with the facilities they serve, although some or all gen-tie lines may be retained if needed for grid reliability. VCIP infrastructure such as the collection substations and connecting transmission lines would likely be retained as part of the state grid where they would serve a vital role in providing resilience and redundancy by providing alternative transmission pathways and to help avoid congestion on the overall grid. The use of the contemplated collection substations and connecting transmission lines would essentially be permanent. While some transmission towers and conductors may be decommissioned over time, it is likely that they would be replaced and upgraded with new equipment. The potential decommissioning of the collection substations and connecting transmission lines in the future is not currently foreseeable, so the construction of this infrastructure would be considered a permanent commitment to this or similar uses. However, these uses would transmit significant quantities of renewable resources, which would more than offset the consumption of nonrenewable resources associated with the collection substations and outside transmission lines. Therefore, implementation of the VCIP would not result in significant irreversible environmental changes in this regard.

Potential for Environmental Accidents and Contamination

A project would result in significant irreversible environmental changes if the project involves uses in which irreversible damage could reasonably foreseeably result from any potential environmental accidents associated with the project. Construction and operation of the VCIP 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 VCIP 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). As discussed in detail in Section 4.9. *Hazards and Hazardous Materials*, under Impact HAZ-2, the BESS facilities would also be subject to strict regulations and fire codes to prevent and limit the potential for fire. These applicable requirements would significantly reduce the likelihood and severity of accidents that could result in irreversible environmental damage. Any solar panels and storage batteries containing toxic elements would be safely recycled as universal waste. Thus, the potential for permanent damage or contamination due to environmental accidents is insubstantial and is considered less than significant.

In summary, the contemplated VCIP solar/BESS facilities would be removed at the end of their useful lives and thus would neither result in significant irretrievable use of nonrenewable materials, nor commit future generations to similar uses, nor result in environmental accidents causing permanent damage or contamination. Therefore, implementation of the VCIP Energy Resource Plan would not result in significant irreversible environmental changes. The planned collection substations and connecting transmission lines, and some or all gen-tie lines would be needed for grid resilience after the solar and BESS facilities are removed, and thus this infrastructure would be considered a permanent commitment to this or similar uses.

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