

10.0 GLOBAL CLIMATE CHANGE

This chapter assesses the potential contribution of the project to the worldwide phenomenon of global climate change. There is general consensus that global climate change is occurring and that it is related to increasing atmospheric levels of greenhouse gases (GHGs). GHGs are emitted by natural processes and human activities, which consist largely of combustion of fossil fuels. The GHG emissions that are related to human activity are the subject of increasing scientific and public concern, and of government action.

In California, the Legislature has declared that global climate change is an important environmental issue that must be addressed under CEQA. Efforts are underway at all levels of government to further define and quantify CEQA analysis issues, and relevant efforts are discussed below. One such effort by the California Association of Environmental Professionals (AEP, 2007) indicates that land development projects that is, projects whose GHG contribution is related primarily and indirectly to vehicle travel and household energy use will ordinarily have less than significant effects on global climate change at a project (i.e., local) level. Under CEQA, then, global climate change associated with land development is considered as a potential *cumulative* effect, and it is in that framework that the issue is discussed in this chapter.

ENVIRONMENTAL SETTING

Chapter 6.0, Air Quality, describes most of the local setting as it relates to climate change. The following focuses more on the regional, state and international levels of climate change setting and regulation.

Global Climate Change Background

Global climate change is a subject of increasing scientific and public dialogue and concern. A major source of global climate change is understood to be atmospheric concentrations of GHGs that trap heat in the earth's atmosphere. GHGs include carbon dioxide (CO₂), by far the most common GHG and the largest contributor to global climate change. Others include methane, nitrous oxide and other less-abundant gases. Total worldwide emissions of GHGs in 2004 were estimated at 20,135 million metric tons (MMT) of CO₂ equivalent (CO₂e). U.S. emissions during the same year were estimated at 7,074 MMT CO₂e. One million metric tons equals approximately 1.1 million U.S. tons.

Some GHGs have considerably higher global warming potential (GWP) than others. The GWP is the potential of a gas or aerosol to trap heat in the atmosphere. The reference gas for GWP is carbon dioxide, which has an assumed GWP of one. Methane has a GWP of 21, which means that it has a global warming effect 21 times greater than carbon dioxide on a molecule-by-molecule basis. GWPs for other GHGs include 120 for nitrous oxide and 264 for HFC-23.

GHG emissions are associated with numerous human activities, primarily those that involve the combustion of carbon-based fuels. The major sources of greenhouse gases in California include transportation (40.7%), electric power generation (20.5%), industrial activity (20.5%), agriculture and forestry (8.3%) and others (8.3%) (California Energy Commission, 2006). GHG emissions in California in 2004 were estimated at 484 million metric tons CO₂e.

Concerns related to global climate change include the direct consequences of an altered, warmer climate, but also include indirect effects such as reduced air quality, reduced snowpack, higher-intensity storms and the impact of these changes on water resources. Melting of polar ice will contribute to rising sea level. All of these changes have implications for the human environment as well as existing ecosystems and the species that depend on them.

The 2005 GHG concentration in the atmosphere was estimated at 375 parts per million (ppm). The United Nations Intergovernmental Panel on Climate Change (IPCC) has constructed several emission trajectories of greenhouse gas concentrations needed to stabilize global temperatures and climate change impacts. The IPCC concluded that stabilization of greenhouse gases at a concentration of 400-450 parts per million (ppm) carbon dioxide-equivalent is required to keep mean global warming below 2° Celsius, which is assumed to be necessary to avoid dangerous climate change (IPCC, 2001).

REGULATORY SETTING

International

Global climate change is a subject of longstanding international dialogue and action, dating from the 1988 establishment of the Intergovernmental Panel on Climate Change (IPCC) to further the understanding of human-induced climate change, its potential impacts, and options for adaptation and mitigation (IPCC, 2004). The United States joined other countries around the world in the United Nations Framework Convention on Climate Change (UNFCCC), which established an agreement to gather and share related information and take action to address the impacts of climate change (UNFCCC, 2007).

The Kyoto Protocol, a treaty negotiated under the auspices of the UNFCCC, committed the participants to reduce emissions of GHGs or to engage in emissions trading. However, the United States did not ratify the treaty.

In 2009, the UNFCCC held its annual Climate Change Conference in Copenhagen, Denmark. At the conference, member states agreed to make voluntary pledges for GHG emission reductions to be achieved by 2020. If the pledges are considered insufficient to meet the goal of global temperature rise to no more than 2° Celsius, then the accord would be reviewed no later than 2015 (UNFCCC, 2009).

Federal

Until recently, the federal government has not adopted any comprehensive national strategy for reducing GHG emissions. However, under the current administration, efforts have been made to institute new federal fuel economy and GHG emissions standards modeled after existing California standards. In a related action, the U.S. Environmental Protection Agency in 2009 granted California the authority to implement GHG-reducing auto standards. The federal government is planning additional efforts to support alternative and renewable energy sources, including a new requirement that 25% of energy generation be derived from renewable sources by 2025. Additional energy conservation standards and institution of a federal cap-and-trade system are being considered. Additional action by Congress and the President is expected in the near future.

State

Assembly Bill (AB) 32

The Governor of California and the State Legislature have declared their concern with regard to global climate change and have set State agencies in motion to identify and implement strategies for the reduction of GHG emissions, primarily through AB 32, the Global Warming Solutions Act of 2006. AB 32 identifies global climate change as a “serious threat to the economic well-being, public health, natural resources and the environment of California.” A project that would contribute substantially to global climate change may involve a significant effect on the environment that needs to be considered under CEQA.

Primary responsibility for AB 32 implementation was placed with the California Air Resources Board (ARB). ARB’s Climate Action Team directs a variety of activities oriented toward meeting the AB 32 goals of reducing GHG emissions to 2000 levels by 2010 and to 1990 levels by 2020. These specific legislative goals are directly related to the Governor’s overall objective established in Executive Order S-3-05 of reducing GHG levels 80% below 1990 levels by the year 2050. The State’s current planning efforts are oriented toward meeting the legislated 2010 and 2020 goals while placing the State on a trajectory that will facilitate eventual achievement of the 2050 goal. The desired GHG emission reduction of 80% below 1990 levels is consistent with the IPCC goals for stabilizing global climate change.

Climate Change Scoping Plan

ARB planning efforts recognize that reducing GHG emissions will require a broad response across the spectrum of human activity in the state. GHG reduction strategies being explored include, among others, new industrial and emission control technologies; alternative energy generation technologies; advanced energy conservation in building lighting, heating, cooling and ventilation; reduced-carbon fuels; hybrid, electric and other no-, low- or lower-carbon vehicles; and other methods of improving vehicle mileage; and changes in travel patterns.

In December 2008, ARB adopted the Climate Change Scoping Plan, its plan for meeting the AB 32 targets. The Climate Change Scoping Plan details the GHG reduction initiatives that will be undertaken by the State or passed down to local government and quantifies the GHG emission reductions associated with each of the initiatives. Self-described as “ambitious but achievable”, the Scoping Plan proposes to achieve a 30% reduction in projected business-as-usual emission levels for 2020, which is assumed to achieve the 2020 goal of reducing GHG emissions to 1990 levels. The provisions of the Scoping Plan include:

- Expanding and strengthening existing energy efficiency programs as well as building and appliance standards;
- Achieving a statewide renewables energy mix of 33 percent;
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system;
- Establishing targets for transportation-related greenhouse gas emissions for regions throughout California, and pursuing policies and incentives to achieve those targets;
- Adopting and implementing measures pursuant to existing State laws and policies, including California’s clean car standards, goods movement measures, and the Low Carbon Fuel Standard; and
- Creating targeted fees, including a public goods charge on water use, fees on high global warming potential gases, and a fee to fund the administrative costs of the State’s long-term commitment to AB 32 implementation.

The Scoping Plan defines the 2020 GHG emissions target as 427 MMT CO₂e. Achieving this level will require a reduction of 169 MMT CO₂e from the State’s projected 2020 business-as-usual emissions of 596 MMT CO₂e, which is approximately 30% of those emissions and a 10% reduction of 2002-2004 average emissions.

Table 10-1 lists the Scoping Plan’s recommended reduction measures. As indicated in Table 10-1, these measures are projected to result in a total GHG emission reduction of 174 MMT CO₂e by 2020, which exceeds the target reduction by 5 MMT CO₂e. Of these reductions, nearly 85% will be achieved under the proposed regional cap-and-trade system and “complementary measures.” Several other identified measures, including reduction in state and local government operations, would contribute an addition 42 MMT CO₂e or more of GHG reductions. The potential contribution of these other identified measures is not quantified in the scoping plan or counted in the projected reductions, although estimates of reductions are provided for some of them.

TABLE 10-1
CLIMATE CHANGE SCOPING PLAN
RECOMMENDED GREENHOUSE GAS REDUCTION MEASURES

Recommended Reduction Measures	Reductions Counted Towards 2020 Target (MMT CO ₂ e)
<i>Estimated Reductions from Cap-and-Trade Program and Complementary Measures</i>	
California Light-Duty Vehicle Greenhouse Gas Standards	31.7
Energy Efficiency	26.3
Renewables Portfolio Standard (33% by 2020)	21.3
Low Carbon Fuel Standard	15.0
Regional Transportation-Related GHG Targets	5.0
Vehicle Efficiency Measures	4.5
Goods Movement	3.7
Million Solar Roofs	2.1
Medium/Heavy Duty Trucks	1.4
High Speed Rail	1.0
Industrial Measures (for sources covered under cap-and-trade program)	0.3
Additional Reductions Necessary to Achieve the Cap	34.4
Subtotal	146.7
<i>Estimated Reductions from Uncapped Sources/Sectors</i>	
High Global Warming Potential Gas Measures	20.2
Sustainable Forests	5.0
Industrial Measures (for sources not covered under cap-and-trade program)	1.1
Recycling and Waste (landfill methane capture)	1.0
Subtotal	27.3
<i>Total Reductions Counted Towards 2020 Target</i>	<i>174.0</i>
Other Recommended Measures	Estimated 2020 Reductions (MMT CO ₂ e)
State Government Operations	1.0-2.0
Local Government Operations	TBD
Green Buildings	26.0
Recycling and Waste (mandatory commercial recycling, other measures)	9.0
Water Sector Measures	4.8
Methane Capture at Large Dairies	1.0
<i>TBD - to be determined</i>	
<i>Source: Climate Change Scoping Plan, California Air Resources Board (2008)</i>	

San Joaquin Valley APCD

In August 2008, the San Joaquin Valley APCD adopted its Climate Change Action Plan. The Climate Change Action Plan directed the APCD's Air Pollution Control Officer to develop guidance to assist APCD staff, Valley businesses, land use agencies and other permitting agencies in addressing GHG emissions as part of the CEQA process. Regarding CEQA guidance, some of the goals of the Climate Change Action Plan are to assist local land use agencies, developers and the public by identifying and quantifying GHG emission reduction measures for development projects and by providing tools to streamline

evaluation of project-specific GHG effects, and to assist Valley businesses in complying with State law related to GHG emissions.

A product of this direction to provide CEQA guidance is the *Final Staff Report – Climate Change Action Plan: Addressing GHG Emissions Impacts*, presented to the APCD Board in December 2009. A central component of the *Final Staff Report* is the establishment of Best Performance Standards (BPS), which are specifications or project design elements that identify effective, feasible GHG emission reduction measures. Emission reductions achieved through BPS implementation would be pre-quantified, thus negating the need for project-specific quantification of GHG emissions. For projects not implementing BPS, demonstration of a 29% reduction in GHG emissions from business-as-usual conditions is required to determine that a project would have a less than cumulatively significant impact. This reduction percentage is consistent with the goal of the state’s Scoping Plan, which is an approximate 30% reduction from business-as-usual GHG emissions.

City of Lodi

Energy Sources and Service Providers

Electrical service to the City is provided by the Lodi Electric Utility. The Lodi Electric Utility is a customer-owned and city operated utility that provides electrical services for residential, commercial and industrial customers in the City. For 30 years, the Lodi Electric Utility has been a member of the Northern California Power Agency, which is a collective group comprised of utilities that own and operate their own electrical power systems.

A Resolution (Resolution No. 2006-205) by the Lodi City Council endorses the California Municipal Utilities Association’s Principles Addressing Greenhouse Gas Reduction Goals. This endorsement included several measures consistent with AB 32. These measures include:

- Developing a GHG reduction plan consistent with the state’s reduction goals.
- Proactively implementing state law, which requires that “...each local publicly owned electric utility, in procuring energy, shall first acquire all available energy efficiency and demand reduction resources that are cost-effective, reliable and feasible.”
- After first investing in energy efficiency, then pursuing renewable energy supplies, and other non-GHG emitting energy resources and clean fossil resources:
 1. Continue to aggressively pursue renewable energy supply.
 2. Facilitating distributed generation/combined heat and power projects.
- Quantifying the financial risk of GHG-producing resources in the planning and procurement process, including, but not limited to, quantifying a carbon emissions risk “adder” (credit) for both in-state and out-of-state resources.
- Considering environmental justice issues in its overall resource procurement and greenhouse gas reduction policies.
- Supporting standardized, mandatory greenhouse gases reporting from all significant sources.

- Providing measurement and verification of programs that reduce greenhouse gas emissions.
- Providing education to customers on ways they can reduce their greenhouse gas emissions, and providing assistance where feasible.

City Energy Conservation Programs

The City currently administers and implements a variety of local energy conservation and sustainability programs. They include, but are not limited to water conservation, rebate programs, transit services, energy efficient vehicle fleet and use of drought tolerant landscaping materials.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Significance Thresholds

Effective March 18, 2010, Appendix G of the CEQA Guidelines includes questions that will serve as qualitative significance thresholds to determine project impacts on global climate change. Based on these questions, a project may have a significant effect on the environment if it would:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.
- Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose reducing the emissions of greenhouse gases.

The ARB is charged with the development of significance thresholds for global climate change. ARB staff issued a paper outlining a potential approach to establishing quantitative significance thresholds in late 2008. However, no additional guidance has been issued by ARB to date.

The ARB prepared the Climate Change Scoping Plan, which outlines the State's strategy to achieve the 2020 greenhouse gas emissions limit. The APCD adopted its Climate Change Action Plan, which is designed to implement the mandates of AB 32. Therefore, the project will be evaluated against the following qualitative measure.

- Consistency with the ARB's Climate Change Scoping Plan and the APCD's Climate Change Action Plan.

Impacts of Project-Related Greenhouse Gas Emissions

GHG emissions would result directly and indirectly from the construction and maintenance of the project components. Potential construction sources of direct GHG emissions would include construction employee travel and the operation of heavy and light internal combustion construction equipment. Indirect GHG emissions would result from use of commercial energy during the construction process and from resource

extraction and manufacturing of construction materials. These emissions would be short-term and limited to the period of project construction. Maintenance of the project facilities would also generate GHG emissions. These emissions would be long-term, continuing indefinitely. However, such emissions would be minimal, mainly related to vehicle travel associated with operations and maintenance.

Estimated GHG emissions associated with the project are shown in Table 10-2. These include projected construction emissions and operational/maintenance emissions for the most substantial sources. ARB's URBEMIS 2007 (v 9.2.4) computer model was used to estimate direct CO₂ emissions from construction activities, and the California Climate Action Registry Protocol was used to estimate mobile source methane (NH₄) and nitrous oxide (N₂O) emissions from vehicular travel associated with the project.

Indirect emissions also would occur with the generation of electricity that would be transmitted by the 60 kV power line. However, generation of electricity would occur independently of the project, and transmission of this electricity would occur even if the project were not built. Therefore, these indirect emissions are not included in the project estimate.

TABLE 10-2
ESTIMATED GREENHOUSE GAS EMISSIONS
FROM PROJECT CONSTRUCTION, NO MITIGATION

Source	Estimated Emissions (CO ₂ e Lbs.)
Construction Emissions*	2,701.63
Mobile Source Methane and NO ₂ Emissions	0.17
Total GHG Emissions (lbs)	2,701.80
Total GHG Emissions (MMT)	0.00000123

* Includes mobile source emissions of CO₂. Emissions would cease once construction is completed.
Sources: URBEMIS 2007 v 9.2.4; General Reporting Protocol Version 3.1, California Climate Action Registry (2009)

Table 10-3 presents the greenhouse gas emissions inventory for California in 2006, broken out by category as defined in the Scoping Plan. As shown in Table 10-3, the total net greenhouse gas emissions were 479.80 million metric tons (MMTs). The total estimated greenhouse gas emissions from project construction would be an extremely low percentage of the total state emissions in 2006.

Project operations are expected to generate very little greenhouse gases. The only source of greenhouse gases would be from vehicles conducting routine inspections and maintenance, although some more vehicles may be sent out for emergency electrical line repairs. These emergency repairs are anticipated to be infrequent, and therefore not a major source of greenhouse gases. For a proposed transmission line project in Tulare County, it was assumed that ground inspection would involve a crew truck with a 300-horsepower diesel engine, and would occur 7.5 days per year. This activity would emit 287.25 lbs of CO₂ and 0.003 pounds of methane (ESA, 2009). It is anticipated that inspection of the proposed power line would emit fewer greenhouse gases, as most of the

power line would be easily accessible along paved roads, and the length of the power line would be less than eight miles.

TABLE 10-3
CALIFORNIA GREENHOUSE GAS INVENTORY

Category	Emissions (MMT CO ₂ e)
Transportation	185.77
Electric Power	105.92
Commercial and Residential	44.37
Industrial	96.05
Recycling and Waste	6.31
High Global Warming Potential*	15.15
Agriculture	30.13
Forestry	0.19
Total Gross Emissions	483.87
<i>Forestry Net Emissions</i>	<i>-4.07</i>
Total Net Emissions	479.80
* High Global Warming Potential emissions include ozone depleting substance (ODS) substitutes, electricity grid SF ₆ losses, and semiconductor manufacturing.	
Source: "California Greenhouse Gas Inventory for 2000-2006," California Air Resources Board (2009)	

Level of Significance: Less than significant

Mitigation Measures: None required.

Project Consistency with Applicable Plans

Climate Change Scoping Plan

As with other individual small projects (e.g., projects that are not cement plants, oil refineries, electric generating facilities/providers, co-generation facilities, or hydrogen plants or other stationary combustion sources that emit more than 25,000 metric tons of CO₂e per year), the emissions increases that would result under the proposed 60 kV Power Line Project would not be expected to individually have a significant impact on global climate change (CAPCOA, 2008). The primary concerns would be whether implementation of the proposed project would conflict with the State goals for reducing GHG emissions and whether it would have a cumulatively considerable impact on global climate change.

As discussed above, the Climate Change Scoping Plan includes 16 recommended measures that would produce estimated GHG reductions of 174 MMT CO₂e by 2020 and achieve the State's goal of reducing GHG emissions to 1990 levels by 2020. Implementation of these measures would result in statewide changes in vehicle efficiency, use of lower-carbon fuel sources, building energy efficiency. These changes would be effected through a cap-and-trade system and "complementary measures."

Many of the Scoping Plan's 16 recommended reduction measures do not directly apply to a utility, power line project. Most of the applicable measures to the project would be related to the use of EUD's vehicles for project operations and maintenance. The following measures are potentially applicable to the project:

California Light-Duty Vehicle Greenhouse Gas Standards. Under this measure, California would implement new standards to reduce greenhouse gas emissions from passenger and light-duty vehicles. Specifically, the State would implement the Pavley greenhouse gas vehicle standards that seek to lower such emissions to the maximum extent technologically feasible, beginning with the 2009 model year. It is expected that, if EUD purchases any new light-duty vehicles for its operations and maintenance fleet after the 2009 model year, the vehicles would comply with the Pavley standards.

Low Carbon Fuel Standard. In addition to including vehicle efficiency improvements and lowering vehicle miles traveled, the State is proposing to reduce the carbon intensity of transportation fuels consumed in California. ARB is developing a Low Carbon Fuel Standard that would reduce the carbon intensity of California's transportation fuels by at least 10% by 2020, as called for in Executive Order S-01-07. It is expected that EUD operations and maintenance vehicles would use lower-carbon fuels as they become available.

Vehicle Efficiency Measures. Several additional measures are being considered by ARB and the California Integrated Waste Management Board to reduce light-duty vehicle greenhouse gas emissions. It is expected that EUD vehicles would comply with any new regulations related to vehicle efficiency.

Medium/Heavy-Duty Vehicles. The State is considering the adoption of efficiency measures for medium- and heavy-duty vehicles. Requiring retrofits to improve the fuel efficiency of heavy-duty trucks could include a requirement for devices that reduce aerodynamic drag and rolling resistance. It is expected that, if EUD purchases any new medium or heavy-duty vehicles for its operations and maintenance fleet, the vehicles would comply with any implemented vehicle efficiency regulations.

In summary, the project is expected to comply with all applicable regulations arising from the Climate Change Scoping Plan. Compliance with the Scoping Plan would reduce the potential greenhouse gas emissions that would be generated from project operation and maintenance activities. Project maintenance would occur infrequently, during routine maintenance and inspection of the power line or during emergency repairs. Given the limited time of project maintenance, greenhouse gas emissions generated by the project are expected to be less than significant.

APCD's Climate Change Action Plan

The APCD's Climate Change Action Plan was prepared as guidance to assist APCD staff, businesses, land use agencies and other permitting agencies in addressing GHG emissions as part of the CEQA process. From the perspective of the APCD, the effects of project-specific GHG emissions are cumulative, and their incremental contribution to global climate change could be considered significant unless reduced or mitigated. Therefore,

APCD staff concluded that this impact is best addressed by requiring all projects subject to CEQA to reduce their emissions through project design elements (APCD, 2009).

The Action Plan has proposed performance-based standards for development projects and for specific stationary sources of GHG emissions, such as power generators, landfills and livestock operations. Most of the standards proposed for development projects do not apply to the 60 kV Power Line Project. The only potential source of GHG emissions from the project is maintenance vehicle trips. One potential standard that may apply to the project is vehicle use. Three overarching strategies for reducing GHG emissions from vehicle use are more efficient vehicles, lower-carbon fuels, and reduction in vehicle miles traveled. The measures designed to implement these strategies are the same as the recommended measures in the Scoping Plan. As discussed previously, the project expects to be in compliance with these measures.

Level of Significance: Less than significant

Mitigation Measures: None required

Impacts of Climate Change on Project

Aside from impacts a project may have on climate change, recent CEQA guidance also encourages an evaluation of impacts that climate change may have on a project. One of the impacts anticipated as a result of climate change is an increase in average temperatures. A consequence of this increase is an additional demand for electricity to operate air conditioning systems. An August 2009 study by the California Climate Change Center sought to quantify the additional demand by residences. Based on simulations using climate change models, predicted aggregate demand ranges from an 18% to 55% increase in total demand by the end of the century (California Climate Change Center, 2009).

The increased electrical demand would place a greater burden on California's electrical transmission system. Expansion of the California transmission system has not kept pace with demand over the last 20 years preceding 2003, according to a California Energy Commission report. This has resulted in congestion, reliability problems, and higher costs related to insufficient transmission infrastructure. During the hot summer months, maintaining system reserves can be precarious and the increasing frequency of system emergencies are a result, in part, of inadequate transmission infrastructure. During heavy summer peak load periods, critical transmission paths in the state are often constrained. These constraints can make it impossible to transfer adequate power from one area of the state to another and restricts the import of less expensive power from out-of-state. One consequence is that less efficient plants are being run to meet demand (California Energy Commission, 2003). Less efficient plants tend to generate more greenhouse gases.

The purpose of the project is to increase the reliability of the electrical system serving Lodi. An increased reliability ensures that City residents and businesses would receive the electricity necessary to operate air conditioning and other systems with a minimum of down time. It also would reduce potential congestion on transmission lines, thereby improving the delivery efficiency of the electrical system. Increased efficiency would

reduce the need for the generation of additional power, especially from less efficient plants. Therefore, a more reliable system would not only ensure that City residents and businesses have available power to cope with increased temperature changes, but also would avoid situations in which more greenhouse gases would be generated.

Level of Significance: Less than significant

Mitigation Measures: None required

11.0 HEALTH AND SAFETY

This chapter addresses existing and potential future conditions in the project area that could present a health or safety concern to construction workers, future occupants and users of the project site, in particular concerns related to transportation of hazardous materials and hazardous material/waste contamination. The absence, presence and level of concern associated with each is identified and discussed in the following sections. A report prepared by Info Services provided much of the information in this chapter, along with the GeoTracker database maintained by the State Water Resources Control Board (SWRCB) and the Lodi Energy Center EIR. Potential concerns with respect to flooding are addressed in Chapter 12.0, Hydrology and Water Quality. Potential concerns related to geologic hazards and noise are addressed in Chapter 9.0, Geology and Soils, and Chapter 13.0, Noise.

ENVIRONMENTAL SETTING

Hazardous Materials and Sites

Hazardous materials are defined as substances or combinations of substances that may contribute to increases in serious illness or mortality, or pose a substantial hazard to human health or the environment when improperly treated, stored, transported or disposed. Hazardous wastes are hazardous materials that no longer have a practical use. Hazardous materials or wastes are generally classified as toxic (heavy metals, pesticides, solvents), ignitable (gasoline, natural gas), corrosive (strong acids and bases) and/or reactive (explosives, among others). Although distinct from hazardous materials, as defined above, petroleum products also represent potential concerns for health and environmental contamination. Health risks inherent in existing site contamination would affect construction workers during project construction. Routes of exposure may include skin contact with soil, inhalation of particles/vapors from soil in outdoor air, inhalation of vapors from gas released into indoor air, and contact with groundwater.

The project area historically has been in agricultural use. Agricultural activities have typically included the use of pesticides, herbicides and fertilizers. The County's support for expansion and intensification of the agricultural economy increases risks associated with agricultural chemical (pesticides and organic/inorganic fertilizers) product residuals and waste. However, the recent increase in the use of natural organic supplements and best farming practices to control insects and fertilize rangeland is decreasing the potential residual agricultural chemical impacts from farming (San Joaquin County, 2009). Database searches by Environmental Data Resources and Info Services did not reveal any significant contamination occurring as a result of agricultural activities in the project area.

A site detail report by Info Services indicated a few locations adjacent to the project area that have a record of hazardous materials or waste. An agricultural supply business owned

by Simplot is located along the Union Pacific railroad tracks near the intersection of Harney Lane and DeVries Road. A search of the GeoTracker database revealed the Simplot site is on record under the Spills, Leaks, Investigation and Cleanup (SLIC) program. The record indicated a reported leak, but is not specific on the type of leak or when the incident occurred. Also, there is no other record of any contamination occurring at the site. The Central Valley Regional Water Quality Control Board (RWQCB) considered this case “open-inactive” as of 1988 (Info Services, 2009).

The Lodi WPCF site contains the City’s wastewater treatment plant and adjacent to that is the NCPA power plant. The wastewater treatment plant uses chlorine in its operations. On January 2000, a process upset caused the release of 26 pounds of chlorine into a ditch. No injuries occurred, and no significant adverse impacts of the release were reported (Info Services, 2009). The NCPA power plant stores anhydrous ammonia, which has toxic effects on people who make contact with the substance in its liquid or vapor form, as well as when the substance is inhaled or ingested (NCPA, 2008). No anhydrous ammonia releases have been recorded at the power plant site (Info Services, 2009). No record exists of any contamination occurring at the Lodi WPCF site (EDR, 2008).

Highway Transportation

Highways, railroads and airports represent human health and safety risks associated with noise and accidents that could result in injury to persons or damage to structures located on adjoining or nearby lands. Noise concerns associated with transportation sources are addressed in detail in Chapter 13.0, Noise, and are related primarily to traffic noise.

The two main roadways in the vicinity of the project area are Interstate 5 and SR 12. Both highways carry significant amounts of truck traffic (see Chapter 17.0, Transportation). Some of these trucks carry materials defined as hazardous, although data on the number of trucks are not available. Throughout San Joaquin County, spills resulting in evacuation or closing of vital infrastructure such as a major freeway occur several times per year. Due to the close relationship between hazardous materials and transportation systems, a hazardous materials release can occur anywhere along any of the roadways or freeways (San Joaquin County, 2008).

Rail Transportation

A Union Pacific railroad track crosses the center of the Primary Route. Precise details of the number of daily train trips this track accommodates, and the type and volume of potentially hazardous materials transported on this track, are not available to the public for security reasons. Nonetheless, it is assumed that substantial amounts of hazardous materials are transported along this line.

Another potential hazard associated with railroads is accidents at places where roads cross railroad tracks. Harney Lane crosses the Union Pacific tracks near the intersection with DeVries Road. This crossing has an automatic gate that descends when a train approaches. This reduces the potential hazard at this crossing.

Air Transportation

Kingdon Airpark is located directly south of Tredway Road, where the Primary Route of the project travels. The recently adopted Airport Land Use Compatibility Plan (ALUCP) Update, dated July 2009, by the San Joaquin Council of Governments sets forth compatibility zones for Kingdon Airpark (Figure 11-1).

The compatibility zones in part are used to establish height criteria for development in these zones. Height limits in these zones are based on Part 77 Subpart C of the Code of Federal Regulations, the United States Standard for Terminal Instrument Procedures, and applicable airport design standards published by the Federal Aviation Administration (FAA) (Coffman Associates, 2009). Table 11-1 shows the height criteria for each compatibility zone.

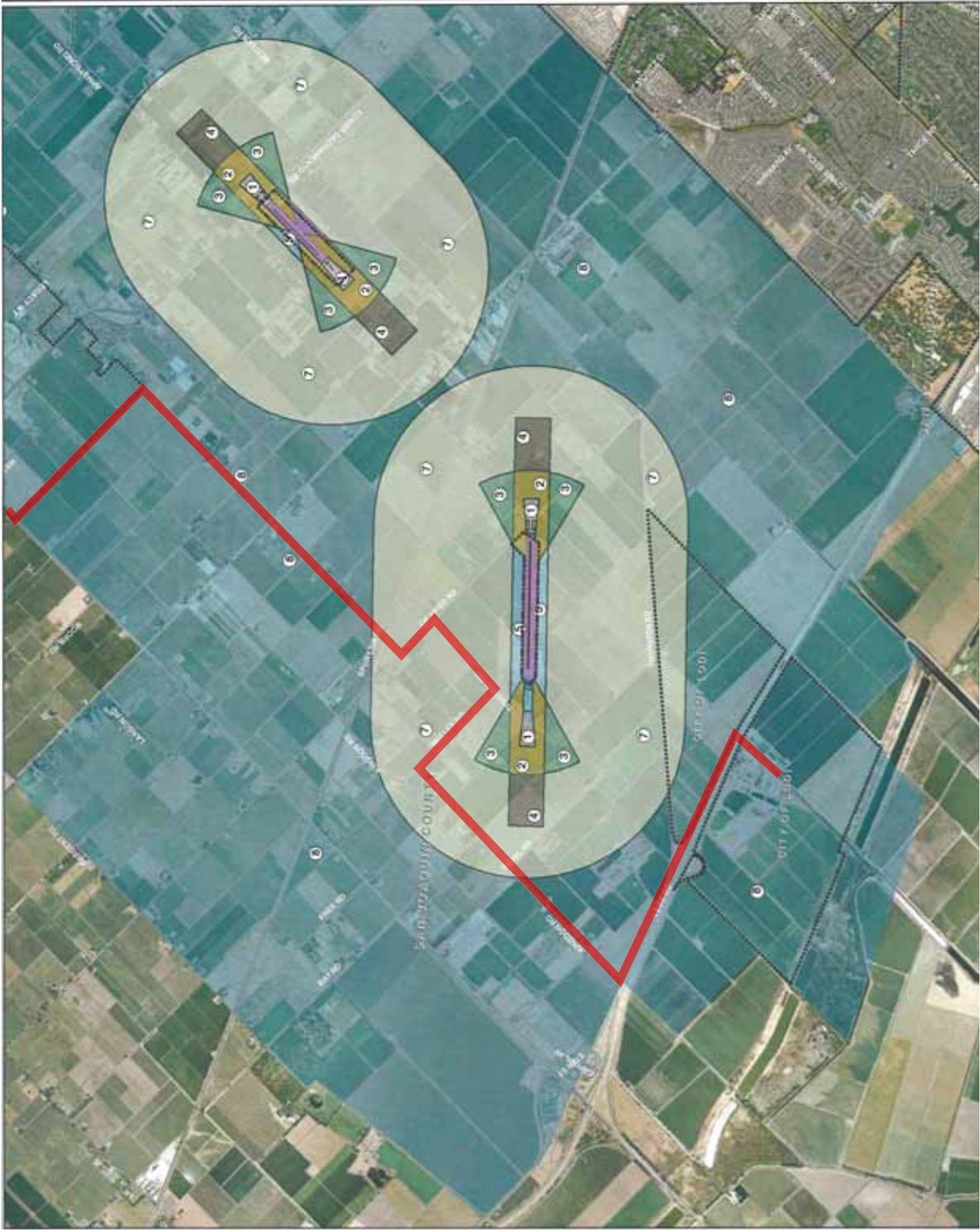
TABLE 11-1
HEIGHT CRITERIA FOR AIRPORT COMPATIBILITY ZONES

Zone	Zone Name	Height Criteria
1	Runway Protection Zone	Airport Land Use Commission (ALUC) review required.
2	Inner Approach/Departure Zone	ALUC review required for any proposed object taller than 35 feet above ground level (AGL), unless the airport controls an easement on the land on which the object is to be located and grants a waiver to height restrictions.
3	Inner Turning Zone	ALUC review required if taller than 70 feet AGL.
4	Outer Approach/Departure Zone	ALUC review required if taller than 70 feet AGL.
5	Sideline Safety Zone	ALUC review required if taller than 35 feet AGL.
6	Airport Property	ALUC review required if taller than 35 feet AGL.
7	Traffic Pattern Zone	ALUC review required if taller than 100 feet AGL.
8	Airport Influence Area	ALUC review required if taller than 100 feet AGL.

Source: San Joaquin Airport Land Use Compatibility Plan, Coffman Associates, 2009.

High-Voltage Power Lines

High-voltage power lines are defined as those with a line voltage of 50 kilovolts (kV) or more. High-voltage power lines generate electromagnetic fields (EMFs), the strength of which vary in proportion to the line voltage and distance from the line. Power lines of about 60 kV are used to distribute electrical power to lower-voltage neighborhood distribution systems and are ubiquitous in developed areas, including the project area.



LEGEND

- Airport Property
- Municipal Boundary

COMPATIBILITY ZONES

- 1 Runway Protection Zone
- 2 Inner Approach/Departure Zone
- 3 Inner Turning Zone
- 4 Outer Approach/Departure Zone
- 5 Sideline Safety Zone
- 6 Airport Property
- 7 Traffic Pattern Zone
- 8 Airport Influence Area
- Primary 60 kV Power Line Route

SOURCE: SAN JOAQUIN GIS SYSTEM

INSITE ENVIRONMENTAL, INC.

Figure 11-1
KINGDON AIRPORT COMPATIBILITY ZONES

There has been public concern since 1979 that long-term exposure to EMFs surrounding major power lines and other electrical equipment has the potential to contribute to increased risk of cancer. The topic of EMF hazards has been studied intensively and debated for many years. A 1996 report by the National Research Council determined that there is no convincing evidence that EMFs harm human health in any way (Leary, 1996). A 1998 report from an international panel of experts convened by the National Institute of Environmental Health Sciences indicated that EMFs should be regarded as a “possible human carcinogen.” However, the panel chairman indicated that the risk “is probably quite small, compared to many other public health risks (NIOSH, 1998).” A congressionally mandated study by the National Institute of Environmental Health Sciences concluded in June 1999 that the evidence for a risk of cancer and other human disease from EMFs around power lines is “weak” (NIOSH, 1999).

As a precaution, the California Department of Education, School Facilities and Planning Division recommends maintaining a minimum of a 100-foot setback between new school sites and power lines operating at 50 kilovolts or higher. No other known EMF standards exist. The project would not be located on or near any existing or proposed school sites.

REGULATORY SETTING

Federal

29 Code of Federal Regulations (CFR) 1910 *et seq.* and 1926 *et seq.*

These sections contain requirements for equipment used to store and handle hazardous materials for the purpose of protecting worker health and safety. This regulation also addresses requirements for equipment necessary to protect workers in emergencies. It is designed primarily to protect worker health, but also contains requirements that affect general facility safety. The California regulations contained in Title 8 (California equivalent of 29 CFR) are generally more stringent than those contained in Title 29. The administering agency for the above authority is the Occupational Safety and Health Administration (OSHA) and the California Division of Occupational Safety and Health (Cal/OSHA).

49 CFR Parts 172, 173, and 179

These regulations provide standards for labels, placards, and markings on hazardous materials shipments by truck (Part 172), standards for packaging hazardous materials (Part 173) and for transporting hazardous materials in tank cars (Part 179). The administering agencies for the above authority are the U.S. Department of Transportation and the California Highway Patrol (CHP).

State

Title 8, California Code of Regulations (CCR), Section 339; Section 3200 *et seq.*, Section 5139 *et seq.* and Section 5160 *et seq.*

Section 339 of Title 8 of the CCR lists hazardous chemicals relating to the Hazardous Substance Information and Training Act. Title 8, CCR Section 3200 *et seq.* and 5139 *et seq.* address control of hazardous substances. Title 8, CCR Section 5160 *et seq.* addresses hot, flammable, poisonous, corrosive, and irritant substances.

Health and Safety Code Section 25500

California Health and Safety Code, Section 25500, *et seq.*, and the related regulations in 19 CCR 2620 *et seq.*, require local governments to regulate local business storage of hazardous materials in excess of certain quantities. The law also requires that entities storing hazardous materials be prepared to respond to releases. Those using and storing hazardous materials are required to submit a Hazardous Materials Business Plan (HMBP) to their local Certified Unified Program Agency (CUPA) and to report releases to their CUPA and the State Office of Emergency Services. The threshold quantities for hazardous materials are 55 gallons for liquids, 500 pounds for solids, and 200 cubic feet for compressed gases measured at standard temperature and pressure.

Worker Health and Safety Regulations

There are various state regulations related to worker health and safety. Regulations relevant to this project include:

- 8 CCR 1509 *et seq.*, and 1684, *et seq.* Addresses construction hazards, including head, hand, and foot injuries and noise and electrical shock.
- 8 CCR 2700 *et seq.* Addresses high-voltage electrical hazards.
- 8 CCR 3940 *et seq.* Requirements for addressing hazards associated with power transmission, compressed air, and gas equipment.
- 8 CCR 5160 *et seq.* Requirements for addressing hot, flammable, poisonous, corrosive, and irritant substances.

Local

The San Joaquin County Environmental Health Department was approved by the State as the CUPA for San Joaquin County in January of 1997. The San Joaquin County Environmental Health Department administers the Hazardous Waste Generator, Hazardous Waste Onsite Treatment (Tiered Permitting) and Underground Storage Tank programs. The San Joaquin County Office of Emergency Services is a Participating Agency (PA), assisting the CUPA and administering the Hazardous Material Release Response Plan and Inventories and the California Accidental Release Program (CalARP).

Both the San Joaquin County Environmental Health Department (as the CUPA) and the San Joaquin County Office of Emergency Services (as the PA) are responsible for administering HMBPs and other related plans filed by businesses located in the county. In addition, the San Joaquin County Environmental Health Department is responsible for ensuring that businesses and industry store and use hazardous materials safely and in conformance with various regulatory codes. The San Joaquin County Environmental Health Department performs inspections at established facilities to verify that hazardous materials are properly stored and handled and that the types and quantities of materials reported in a firm's HMBP are accurate (NCPA, 2008).

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Significance Thresholds

For the purposes of this EIR, impacts related to hazardous materials and public health are considered significant if the proposed project would:

- Create a public health hazard through the use, production, generation, release, or disposal of materials that pose a hazard to human, animal, or plant populations;
- Expose construction workers to hazardous materials that would create health risks during construction; or
- Expose long-term employees or residents to health or potential health hazards.

Impacts from Hazardous Materials during Construction

Construction and maintenance of the project components would involve the use of limited amounts of potentially hazardous materials. Construction and maintenance vehicles transport and use fuels in ordinary quantities. Other substances are consumer products that are stored in approved containers, and used in generally small quantities and in accordance with the manufacturers recommendations and/or applicable regulations. Hazardous materials used in construction and maintenance include the following:

- Fluids from construction and maintenance vehicles, such as gasoline, diesel, transmission fluid, battery acid, antifreeze, brake fluid, and lubricating materials
- Aerosols, including insect killer, paints, solvents, corrosion inhibitors, lubricators and cleaners
- Safety flares
- Cable cleaning and hot stick wipes
- Connector grease
- Petroleum products and solvents

The probability of spills or leaks occurring during construction activities is low. Any spills or leaks would be minor in nature due to the quantities within the project area at any one

time. If any larger spills or leaks occur, the Woodbridge Fire Protection District would be called for containment and cleanup, with assistance from the Lodi and Stockton Fire Departments if necessary.

Level of Significance: Less than significant

Mitigation Measures: None required

Hazardous Material Impacts During Project Operation and Maintenance

Maintenance and operations of the project would involve the same hazardous materials that would be used during project construction. As with project construction, the probability of spills or leaks occurring during maintenance and operations is low. In fact, the probability would likely be lower, as maintenance activities along the power line corridor would be infrequent and less intensive than construction.

Replacing poles would involve the re-installation of existing pole-mounted transformers on to the new poles. Insulating oil within the pole-mounted transformers is a regulated hazardous substance. On average, the mineral oil content of a pole-mounted transformer is approximately 10 gallons. To prevent oil spills, all transformer units are sealed. All transformers would be subject to regular inspection for leakage and repair or replacement if warranted. Minor spills would ordinarily be cleaned up with materials found in maintenance vehicles. In the event of a more extensive fuel or other spill, as discussed above, EUD would contact the Woodbridge Fire Protection District for containment and cleanup. Spills would be reported to appropriate authorities when required by law, and contaminated soil and/or cleanup materials would be transported to an appropriate disposal site. As a result, no significant hazardous materials impacts are likely to occur as a result of transformer oil spills.

Level of Significance: Less than significant

Mitigation Measures: None required

Transport of Hazardous Materials

As previously described, the amount of hazardous materials used during project construction and operations would be low. Any hazardous materials transported for project construction and operation that are released accidentally would be cleaned up by the appropriate agencies.

The risk of rail accidents, and more specifically accidents involving hazardous materials, is relatively low. The U.S. Department of Transportation, Federal Railroad Administration, found the Union Pacific train accident rate to be 4.18 train accidents per one million train miles traveled, resulting in a less than 0.001% chance of an accident adjacent to the project area. The possibility of a railroad accident containing hazardous materials is considered much lower, as only an average of eight accidents involving hazardous material spills occur annually in all of California. Union Pacific implements a security plan in compliance with the Department of Transportation Final Rule 49 CFR Part 172

Hazardous Materials (HM 232): Security Requirements for Offerors and Transporters of Hazardous Materials. The plan includes requirements to enhance the security of transported hazardous materials and ensures proper cleanup procedures in the instance of an accidental release.

Level of Significance: Less than significant

Mitigation Measures: None required

Impact of High-Voltage Power Lines

The project proposes the installation of a 60 kV power line, which is considered to be "high-voltage." Portions of the power line would pass through agricultural and other undeveloped/unoccupied lands, so EMF exposure would not be an issue. Other portions of the proposed power line will be located near rural residences located adjacent to the Primary Route segments, including Harney Lane, DeVries Road, Neeley Road, Kingdon Road and Thornton Road. As previously described, the evidence for a risk of cancer or other human health concerns from EMFs around power lines is not solid, even in the vicinity of power lines with much higher voltage. Based on this evidence and the fact that the project's power line voltage is at the low end of the range of potential concern, the project would not subject residents to a significant health risk from EMFs.

Level of Significance: Less than significant

Mitigation Measures: None required

Hazards Related to Airport Operations

Kingdon Airpark is located directly south of Tredway Road, a segment in which the Primary Route is located. The current project alignment (the Primary Route) would follow Tredway Road from DeVries to Neeley Road, then turn north onto Neeley Road. The alignment would follow Neeley Road to Kingdon Road, then turn left and follow Kingdon Road until it reaches Thornton Road. Under the current alignment of the Primary Route, the project would encroach only on Kingdon Airpark's Zone 7 (Traffic Pattern Zone) and Zone 8 (Airport Influence Area).

According to the ALUCP Update, dated July 2009, "outdoor stadiums" and similar uses with high intensities (of people) are listed as a prohibited use in Zone 7. Also listed in Zone 7 and Zone 8, as a prohibitive use, is "hazards to flights." Hazards to flights are defined in the ALUCP Update as follows; "Hazards to flight include physical (e.g., tall objects), visual, and electronic forms of interference with the safety of aircraft operations. Land use development that may cause the attraction of birds to increase is also prohibited." Another development condition cited by the ALUCP Update for Zones 7 and 8 is that the Airport Land Use Commission (ALUC) review is required for proposed objects taller than 100 feet (above ground level).

The steel poles and wooden poles will be a minimum of 57 feet above ground level. Heights up to approximately 90 feet or greater will be required for crossing of existing

PG&E transmission lines, the Union Pacific Railroad tracks, and I-5. The Union Pacific Rail tracks and the existing 60 kV power line owned and operated by PG&E along Ray Road will need to be crossed and the Primary Route power poles will exceed the minimum pole height of 57 feet in these locations. Both these crossing are located in compatibility Zone 7 which requires review by the ALUC if proposed objects exceed 100 feet above ground level. The crossing of I-5 is located within Zone 8 and a similar condition regarding review by the ALUC if the proposed objects (the power poles) exceed 100 feet above ground level within this zone. If power pole heights within Zones 7 and 8 exceed 100 feet above the ground level, the power pole or poles could be consider a hazard to flights, thus would be considered a potentially significant impact and would require review by the ALUC and Federal Aviation Administration (FAA).

Level of Significance: Potentially significant

Mitigation Measures:

11-1. If design modifications require power pole heights to exceed 100 feet above ground level along the Primary Route, the Airport Land Use Commission and Federal Aviation Administration shall be notified and a request made to review the land use action (e.g., installation of power poles that exceed 100 feet in height within Compatibility Zones 7 and 8).

Implementation: The Lodi EUD shall be responsible for notifying the ALUC and FAA, if any power pole height exceeds 100 feet.

Monitoring: The Lodi EUD shall be responsible for documenting that notification to the ALUC and FAA has been made prior to plan approval, if required.

Significance After Mitigation: Less than significant.

Electrocution Hazards

Construction of new electrical facilities, including power and distribution lines, would involve increased potential for public exposure to accidental electrocution hazards, usually in connection with pole or line damage when conductor clearance from the ground is reduced or eliminated. The project would be constructed in accordance with all applicable safety standards. Power line failures are anticipated events that are addressed by existing Lodi Electric Utility procedures. Lodi Electric Utility employees are dispatched to inspect any malfunctions or downed lines to prevent public exposure to electrocution hazards and to make repairs if necessary. Existing procedures would reduce potential electrocution hazards to a less than significant level.

Level of Significance: Less than significant

Mitigation Measures: None required

12.0 HYDROLOGY AND WATER QUALITY

This chapter describes the existing surface water hydrology, existing groundwater resources and water quality conditions of the project area, and the potential impacts of the project on these resources. It also identifies and evaluates the potential effects of the project as they relate to flooding and drainage within the project area. Information for this section is from the Lodi Energy Center EIR and other public documents.

ENVIRONMENTAL SETTING

Surface Waters

The western endpoint of the project area (Lodi WPCF) is located on the eastern edge of the Sacramento-San Joaquin Delta. In the Delta, the Sacramento and San Joaquin rivers combine with tidal action from the San Francisco Bay to produce a biologically rich estuarine environment. However, the Delta has been highly modified by channelization and water diversions for municipal, industrial and agricultural uses. As a result, the Delta is a patchwork of numerous islands and tracts surrounded by natural and man-made channels and sloughs. The southern portion of the Lodi WPCF site is bordered by a drainage ditch that discharges into Dredger Cut, which drains into White Slough. White Slough ultimately drains into the Delta (NPCA, 2008).

As a result of the relatively flat topography and agricultural activities, drainage patterns on the project area have been extensively modified. There are no natural surface water features in the project area. The most significant surface water features are the detention ponds at the Lodi WPCF. Several irrigation and drainage ditches traverse the project area. Extensive wetland resources are located in the waterways of the Sacramento-San Joaquin Delta to the west. Chapter 7.0, Biological Resources, discusses wetlands in detail.

Water quality in the rivers and streams of the region varies widely, from resource to resource, and from season to season. During the winter months, waters are generally more turbid as a result of erosion and runoff, colder and richer in dissolved oxygen, and more dilute in terms of dissolved constituents. During the warmer months, flows decrease, temperatures rise, dissolved oxygen levels fall, and bacterial contamination levels increase.

The Delta is classified as an impaired water body under the provisions of the federal Clean Water Act. An impaired water body is one that does not meet water quality standards. For an impaired water body, the Regional Water Quality Control Board (RWQCB) with jurisdiction must establish a total maximum daily load (TMDL) for each pollutant that has caused the water body to be listed as impaired, along with an implementation program to meet the TMDL. There are 11 pollutants for which the Delta does not meet water quality standards. Three of these – chlordane, DDT and dieldrin – are chemicals associated with agricultural operations. A fourth, selenium, has been associated with the leaching of

selenium compounds from normally dry undeveloped lands by agricultural runoff. Two others, mercury and nickel, are associated with mining activities and urban runoff. Other pollutants include dioxin compounds, furan compounds, two types of polychlorinated biphenyls (PCBs), and exotic species from ballast water (NCPA, 2008).

Ground Water

The project area is in the Eastern San Joaquin Subbasin of the San Joaquin Valley Groundwater Basin. The Eastern San Joaquin Subbasin is defined by the extent of sedimentary deposits that are bounded by the Mokelumne River on the north and northwest, the San Joaquin River on the west, the Stanislaus River on the south, and bedrock on the east. Most groundwater in the Eastern San Joaquin Subbasin is characterized by calcium-magnesium bicarbonate or calcium-sodium bicarbonate types. Bicarbonate is predominant in the eastern part of the subbasin. Large areas of chloride type water occur along the western margin of the subbasin (NCPA, 2008).

Domestic wells in the Eastern San Joaquin Subbasin range from approximately 25 to 993 feet in depth, averaging approximately 242 feet. Irrigation wells in the subbasin range from approximately 75 to 780 feet in depth, averaging approximately 349 feet (DWR, 2006, cited in NCPA, 2008). According to a groundwater investigation for the Lodi WPCF, Department of Water Resources (DWR) wells in the vicinity indicate a relatively shallow depth to groundwater in the project area. For wells close to the WPCF site, depth to groundwater ranged from approximately two feet to 21 feet. Wells farther east recorded greater depth to groundwater, as deep as 68 feet at one DWR well near Lower Sacramento Road and Armstrong Road (West Yost Associates, 2006). The primary use of groundwater in the project area is agricultural, but rural residences also use groundwater.

Groundwater elevations in the project area fluctuate seasonally and in response to variations in precipitation from year to year (West Yost Associates, 2006). However, groundwater levels in the Eastern San Joaquin Subbasin have shown a continuous decline over the past 40 years. During this period, groundwater levels have declined at an average rate of 1.7 feet per year and have dropped as much as 100 feet in some areas (DWR, 2006, cited in NCPA, 2008). Regionally, the hydrologic gradient and groundwater movement are controlled by a pumping cone depression east of the City of Stockton that persists throughout the year. This causes the groundwater to move in an east-southeasterly direction. Groundwater use for irrigation is higher to the east of the Lodi WPCF site, resulting in a local gradient that is consistently to the east (West Yost Associates, 2006).

Saltwater intrusion, occurring as a result of declining groundwater levels, has caused water quality to deteriorate eastward along a 16-mile front on the east side of the Delta. In addition, large areas of elevated nitrate levels exist in groundwater supplies within the subbasin southeast of Lodi.

Substantial groundwater recharge occurs in the vicinity of the project area. Sources of groundwater recharge include irrigation of Delta lands and seepage from related Delta waterways to the west, surface-water-irrigated lands, percolation from WPCF storage

ponds, and recharge from WPCF land application areas (City of Lodi, 2006, cited in NPCA, 2008).

Flooding

San Joaquin County is located in a historic natural floodplain. Flooding in San Joaquin County can result from heavy storms, snow melt with heavy runoff, levee failure, dam failure, and localized drainage problems. Of these, levee failure has caused most of the recent major floods (San Joaquin County, 1992). Many of the levees in the Delta are unstable and may fail during severe storms (NCPA, 2008).

Flood Insurance Rate Maps (FIRMs), prepared by the Federal Emergency Management Agency (FEMA), designate areas prone to flooding. The base flood designated on FIRMs is the “100-year” flood, or the flood that is expected to occur on average once every 100 years. FIRMs for the project area indicate that the project area east of Interstate 5 is located in an area designated as Zone B (FEMA, 2002). Zone B is the area located between the limits of the 100-year flood and the 500-year flood (occurs on average once every 500 years), or is an area protected by levees from the base (100-year) flood. The project area west of Interstate 5 is located in Zone A, which is the area where a 100-year flood is expected to occur (FEMA, 2002).

The project area is subject to potential flooding from the failure of dams in the foothill areas to the east. The San Joaquin County General Plan indicates that the project area could be flooded as a consequence of the failure of Camanche Dam, as well as the dams for Pardee Reservoir and Salt Springs Reservoir. Flooding also could occur as a result of the failure of the South Camanche Dikes (San Joaquin County, 1992).

REGULATORY SETTING

Federal

Clean Water Act

The Clean Water Act of 1972 (and as amended) is the major federal legislation governing water quality. The objective of the Clean Water Act is “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” Important applicable sections of the act are:

- Sections 303 and 304, which provide for water quality standards, criteria, and guidelines.
- Section 401, which requires an applicant for any federal permit that proposes an activity that may result in a discharge to “waters of the United States” to obtain certification from the state that the discharge will comply with other provisions of

the Act. In California, certification is provided by the State Water Resources Control Board (SWRCB).

- Section 402, which establishes the National Pollutant Discharge Elimination System (NPDES), a permitting system for the discharge of any pollutant (except for dredge or fill material) into waters of the United States. In California, this permit program is administered by the Regional Water Quality Control Boards.

Executive Order 11988

Under Executive Order 11988, FEMA is responsible for management of floodplain areas defined as the lowland and relatively flat areas adjoining inland and coastal waters subject to a one percent or greater chance of flooding in any given year (the 100-year floodplain). FEMA requires that local governments be covered by federal flood insurance pass and enforce a floodplain management ordinance that specifies minimum requirements for any construction within the 100-year floodplain.

State

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act of 1967, as revised in 2007, provides that all activities that may affect the quality of waters of the state shall be regulated to obtain the highest water quality that is reasonable, considering all demands being made and to be made on those waters. The Act establishes provisions for a statewide program for the control of water quality, which is administered on a local level with statewide oversight.

Within this framework, the Act authorizes two agencies to oversee responsibility for the coordination and control of water quality within California. The State Water Resources Control Board (SWRCB) holds authority over water resources allocation and water quality protection within the state. Among other activities, the SWRCB establishes water quality standards, and guides the nine Regional Water Quality Control Boards. The Regional Water Quality Control Board (RWQCB) implements water quality protection measures by formulating and adopting water quality plans for specific groundwater and surface water basins, and by prescribing and enforcing requirements on all agricultural, domestic, and industrial waste discharges. The project area is within the jurisdiction of the Central Valley RWQCB.

One of the programs that the Central Valley RWQCB implements is the statewide General Permit for Stormwater Discharges Associated with Construction Activity (SWRCB Water Quality Order No. 99-08-DWQ) that applies to construction projects that would disturb one or more acres of soil. The General Permit requires the preparation of a construction Storm Water Pollution Prevention Plan that specifies site management activities that would reduce the amount of contaminants in runoff from the project site.

Groundwater Acts

The State has enacted several pieces of legislation applicable to groundwater issues. The Porter-Dolwig Ground Water Basin Protection Law (California Water Code Section 12920

et seq.) gives the DWR the authority to initiate or participate in investigations, studies, plans and design criteria for projects to prevent degradation of ground water throughout the State. Provisions of the law state that DWR shall, in conjunction with other public agencies, identify the state's groundwater basins and investigate existing general patterns of groundwater pumping and groundwater recharge within such basins to the extent necessary to identify basins subject to critical conditions of overdraft. The Groundwater Ambient Monitoring and Assessment Program, administered by the SWRCB, is a recently enacted program that provides a comprehensive assessment of water quality in water wells throughout the state. The program has two main components - the California Aquifer Susceptibility Assessment and the Voluntary Domestic Well Assessment Project.

Local

City of Lodi

The City of Lodi Municipal Code, Title 15 (Buildings and Construction) addresses flood damage prevention (Chapter 15.60) and sets guidelines for development in flood hazard areas. A development permit shall be obtained before construction or development begins within any area of special flood hazards (Section 15.60.070 of the Lodi Municipal Code). Furthermore, all construction and development in flood hazard areas must adhere to the Standards of Construction in Section 16.60.140, Article III, Provisions for Flood Hazard Reduction.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Significance Thresholds

For the purposes of this EIR, impacts related to geology and soils are considered significant if the proposed project would:

- Substantially alter the existing drainage pattern and result in substantial erosion or siltation on- or off-site;
- Substantially alter the existing drainage pattern and, in turn, increase local storm runoff that would create localized flooding or contribute to flooding downstream;
- Violate any water quality standards, or otherwise substantially degrade the quality of surface water and groundwater;
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table (e.g. the production rate of pre-existing nearby wells would decline to a level which would not support existing land uses or planned uses for which permits have been granted);

- Groundwater pumping associated with project operations would alter the existing surface hydrology or would result in land subsidence;
- Place within a 100-year flood hazard area structures that would impede or redirect flood flows;
- Place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary Map, Flood Insurance Rate Map, or other flood delineation map; or
- Expose people or structures to a significant risk of loss, injury, or death resulting involving flooding, including flooding as a result of the failure of a dam or levee;

Impacts on Surface Water Supply and Quality

The project is not expected to result in any significant adverse effects on surface water resources. There are no named natural streams or other bodies of water in the project area, but there are manmade channels that the project would be located next to, like the ditch adjacent to the NCPA facility that is tributary to White Slough. Potential for soil erosion, described in Chapter 9.0, Geology and Soils, would involve a corresponding potential for sediment contamination of surface waters. However, construction activities that would disturb soil would be limited mainly to the drilling of holes for power pole installation and the construction of footings for the rack system installed in the NCPA facility. The project would not involve any grading. Should proposed construction involve disturbance of one or more acres, EUD would be required to obtain a General Permit for construction and prepare a SWPPP that would contain erosion control measures. However, project construction at each pole site would disturb very little land. Assuming a 3-foot diameter hole and a 225-square foot stock piled area at each hole for the soil from the drilled holes, it is anticipated each pole location would have a disturbed area of 235 square feet. Assuming each of the 140 pole locations had a similar disturbed area, the total amount of land that would be disturbed would be approximately 32,900 square feet; less than one acre of land (one acre = 43,560 square feet).

Project construction would involve the use of some heavy equipment but little use of hazardous materials (see Chapter 11.0, Health and Safety). Consequently, the potential for contamination of surface water resulting from hazardous materials spills would be less than significant. Project operations would not require the use of surface water, nor would they generate any contaminants that could enter surface water.

Level of Significance: Less than significant

Mitigation Measures: None required

Impacts on Groundwater Supply and Quality

The project is not expected to result in any significant adverse effects on groundwater resources. No large-scale grading that could expose or cause physical changes in groundwater systems would occur. Construction activities would be limited mainly to drilling holes for power pole installation. The depth of the holes would be insufficient to reach groundwater throughout most of the project area. As previously described, depth to groundwater near the Lodi WPCF may be shallow, up to two feet below ground surface in some areas. However, these shallower areas are located north and west of the WPCF. It is anticipated that that drilling of holes at the WPCF site would have little impact on groundwater movement or quality.

As previously noted, project construction would involve the limited use of hazardous materials. Consequently, there would be limited potential for contamination of groundwater resources by hazardous material spills. Project operations would not require the use of either surface water or groundwater.

Level of Significance: Less than significant

Mitigation Measures: None required

Project Effects on Stormwater Runoff

The project would not involve paving or the installation of other impervious surfaces. Additional impervious surfaces would generate additional stormwater runoff, as precipitation would be unable to percolate into the ground. The project would occur in existing easements that are mostly undeveloped and would remain so after construction is complete. Therefore, the project would not lead to the generation of additional stormwater runoff.

Project construction would involve some disturbance of soils, which would increase the potential for runoff to carry and discharge sediments into adjacent channels. However, as previously described, ground disturbance would be minimal. Therefore, there would be minimal soil exposure to any runoff that occurs. In addition, dust control mitigation measures described in Chapter 6.0, Air Quality, would further reduce the likelihood of any sediments being transported to water channels.

Level of Significance: Less than significant

Mitigation Measures: None required.

Exposure of Proposed Primary Route to Flooding Hazards

According to FEMA maps, the project area east of I-5 is outside the 100-year floodplain. However, the power pole locations west of I-5 would be located within Zone AE, within

the 100-year floodplain. Given the flat topography of the project area on both the west and east side of I-5, localized flooding potentially could occur. However, since the project involves no habitable structures, such potential flooding would not likely affect the power line or the poles carrying this line.

The project area is exposed to potential flooding from catastrophic failure of dams located in the foothill areas. The likelihood of failure of these facilities has been judged to be low, and less than significant.

Level of Significance: Less than significant

Mitigation Measures: None required