

4.7 Hazards and Hazardous Materials

4.7.1 Setting

Materials and waste may be considered hazardous if they are poisonous (toxicity), can be ignited by open flame (ignitability), corrode other materials (corrosivity), or react violently, explode or generate vapors when mixed with water (reactivity). The term “hazardous material” is defined in law as any material that, because of quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment.¹ In some cases, past industrial or commercial uses on a site can result in spills or leaks of hazardous materials and petroleum to the ground; thus resulting in soil and groundwater contamination. Federal and State laws require that soils having concentrations of contaminants such as lead, gasoline, or industrial solvents that are higher than certain acceptable levels must be handled and disposed as hazardous waste during excavation, transportation, and disposal. The California Code of Regulations (CCR), Title 22, Section 66261.20-24 contains technical descriptions of characteristics that would cause soil to be classified as a hazardous waste. The use of hazardous materials and disposal of hazardous wastes are subject to numerous laws and regulations at all levels of government.

In addition to toxic substances, the CPUC generally provides information about electric and magnetic fields (EMF) in its environmental documents, including this EIR, to inform the public and decision makers. However, the CPUC does not consider EMF, in the context of CEQA, as an environmental impact because there is no agreement among scientists that EMF creates a potential health risk and because CEQA does not define or adopt standards for defining any potential risk from EMF. This section of the EIR addresses the potential for EMF interference with implanted cardiac devices (pacemakers and defibrillators). Additional information about EMF generated by transmission lines is provided in Chapter 2, *Project Description*, and in Appendix B.

Existing Environment

Existing Contamination

Environmental FirstSearch conducted a regulatory database search of sites in the vicinity of the Proposed Project corridor, that are listed on agency files for the documented use, storage, generation, or releases of hazardous materials and/or petroleum products (Environmental FirstSearch, 2008). The database search process reviews approximately 20 lists generated by federal, State, and county regulatory agencies for historically contaminated properties, and for businesses that use, generate, or dispose of hazardous materials or petroleum products in their operation. In addition, the database search reviews lists of active contaminated sites that are currently undergoing monitoring and remediation. The databases searched and reviewed by Environmental FirstSearch are listed in Table 4.7-1.

¹ State of California, Health and Safety Code, Chapter 6.95, Section 25501(o).

**TABLE 4.7-1
 REGULATORY AGENCY DATABASES ACCESSED**

Database	Type of Record	Agency
NPL	National Priority List	United States Environmental Protection Agency (USEPA)
NPL Delisted	National Priority List subset	USEPA
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System	USEPA
NFRAP	Comprehensive Environmental Response, Compensation, and Liability Information System Achieved Sites	USEPA
RCRA COR ACT	Resource Conservation and Recovery Act Information System Sites	USEPA
RCRA TSD	Resource Conservation and Recovery Act Treatment, Storage, and Disposal Facilities	USEPA
RCRA GEN	Resource Conservation and Recovery Information System Generators	USEPA
Federal IC / EC	Brownfield Management System	USEPA
ERNS	Emergency Response Notification System	USEPA/Nuclear Regulatory Commission (NCR)
Tribal Lands	Indian Lands of the United States	U.S. Department of Interior / Bureau of Indian Affairs
SPILLS	RWQCB's spills, leaks, investigations, and cleanups	California Environmental Protection Agency (Cal EPA)
SWL	Solid Waste Information System	California Integrated Waste Management Board
LUST	Leaking Underground Storage Tank Listing	State Water Resources Control Board (SWRCB) / Tulare County Environmental Health
State/Tribal UST/AST	Underground and Aboveground Storage Tank Listing	SWRCB/Tulare County Environmental Health
State/Tribal IC	Deed Restricted Sites Listing	Department of Toxic Substances Control (DTSC)
SMBRPD	Site Mitigation and Brownfields Reuse Program Database	DTSC
Floodplains	100 year and 500 year floodplain boundaries	Federal Emergency Management Agency
RADON	National Radon Database	National Technical Information Service

SOURCE: Environmental FirstSearch, 2008.

The listed sites within the vicinity of the Proposed Project corridor are provided in Table 4.7-2. These sites may have been subjected (or are suspected of being subjected) to a release of hazardous materials or petroleum products that have resulted in contamination of soil and/or groundwater. The table identifies the Rector Substation as a spill site. The FirstSearch Report identified limited information about the site. However, consultation with the Regional Water Quality Control Board (RWQCB) revealed that there had been a spill of transformer oil that had contaminated soil at the site and that the constituents of concern included lead, petroleum

**TABLE 4.7-2
HAZARDOUS MATERIALS SITES IN THE VICINITY OF THE PROPOSED PROJECT**

Site Name	Site Address	Approximate Distance and Direction to Project Corridor	Regulatory List^b	Last update to Database and Site Status
SCE Rector Substation	28361 Road 148, Visalia, CA	0 feet (Rector Substation)	SPILLS	Not Reported
Lemon Cover Fire Station	32490 Sierra Drive, Lemon Cover	475 NE	LUST	Case Closed
Barba Residence	2490 Filbert, Exeter	1,000 SW	UST	Active
Lemon Cove Antique Mall	32396 Sierra Drive, Lemon Cover	1,100 NE	LUST	Case Closed
Frank R. Edmiston	31159 212, Exeter	1,200 NW	UST	Active
Robert J. Tucker	30937 212, Exeter	1,270 NW	UST	Active
TUL922	2300 North Gill Road, Exeter	1,480 SW	LUST	Not Reported
Casa Blanca Market	28809, Road 156, Visalia	1,530 SE	LUST	Case Closed
Kimball Toppers	16385 Avenue 296, Visalia	2,000 NE	LUST	Pollution Characterization
Hathaway S. Nursery	16013 Avenue 296, Visalia	2,000 NE	LUST	Remediation Plan
TUL177	16528 Dillon Avenue, Visalia	2,060 SW	LUST	Not Reported
TUL1056	16528 Dillon Avenue, Visalia	2,060 SW	LUST	Not Reported
TUL1008	22208 Boston Avenue, Exeter	2,320 SE	LUST	Not Reported
Lindcove Ag Field Station	22963 Carson Avenue	2,480 SW	SWL	Active
Foothill Automotive	32812 Sierra Drive, Lemon Cove	Not Reported	LUST	Case Closed

^a The distances shown represent the approximate distance to closest portion of the Proposed Project.

^b Refer to Table 4.7-1 for definitions of the regulatory lists.

SOURCE: Environmental FirstSearch, 2008.

hydrocarbons, and polychlorinated biphenyls (PCBs). The contaminated soil was excavated and disposed of during February 2003. The RWQCB indicated that the case has since been closed (RWQCB, 2008). There are 14 other hazardous materials sites within one half mile of the Proposed Project corridor. The closest which is a LUST (i.e., Leaking Underground Storage Tank) case approximately 475 feet northeast of the Proposed Project corridor in the Lemon Cove area. This site is currently closed. All of the other hazardous materials sites are at least 1,000 feet from the Proposed Project corridor (Environmental FirstSearch, 2008).

A regulatory database search was not conducted for the alternative corridors; however, the types of bulk hazardous materials currently stored and/or used in the vicinity of the alternative corridors

would most likely be petroleum hydrocarbons found in underground storage tanks, such as those at service stations; or in aboveground storage tanks, such as those that are located at farm or ranch operation centers. For example, two aboveground tanks that appear to be for storage of petroleum products are within the estimated right-of-way (ROW) for Alternative 6.

It should also be noted that the majority of the Proposed Project and alternatives would be within existing agricultural areas, where pesticides and herbicides have likely been used. Therefore, there is a possibility that residual pesticide and/or herbicide contamination may exist in the agricultural soils along the Proposed Project and alternative alignments.

Schools

There are two schools within one-quarter mile of the Proposed Project and there are no schools in the vicinity of the alternative alignments.

- Kaweah High School, Community Day School, Independent Study, and Adult Education School, located at 21215 Avenue 300, Exeter; approximately 1,000 feet west of the Proposed Project
- Sequoia Union Elementary School, located at 23958 Avenue 324, Lemon Cove; approximately 1,000 feet from the Proposed Project.

Airports

The nearest airport to any of the Proposed Project or alternative alignments is Woodlake Airport, located approximately 1.5 miles south and 2.1 miles north of Alternative 6 and the Proposed Project, respectively.

Agricultural Aerial Spaying

According to the California Agricultural Aircraft Association (CAAA) and the Federal Aviation Administration (FAA), aerial spraying (crop dusting) is conducted in the study area to control insects, weeds, and diseases (CAAA, 2008 and FAA, 2008a). The preferred method for spraying permanent crops, such as the orchards that are the dominant crop types along the Proposed Project and alternative alignments, is from the ground; however, there are certain circumstances that require spaying of permanent crops from the air, such as in the winter when orchards are too muddy to support ground based spraying activities (TCAC, 2009a and 2009b). One rancher along the Proposed Project alignment has indicated that he needs to have his citrus orchards sprayed from the air approximately once every three years due to poor conditions in the orchards for ground-based spaying (Baker, 2009).

Where electric transmission lines exist in an agricultural area, pilots fly over, beside, and even under transmission lines to spray agricultural land with various products, usually pesticides. General civic aviators are required to distance themselves from the ground or other objects by at least 500 feet. However, crop dusters operate under a waiver that allows them to travel near power lines and close to the ground surface. Crop dusters fly as low as several feet above the ground surface while spraying, sometimes at speeds in excess of 100 miles per hour (FAA,

2008b). Transmission line towers, poles, and conductors present a substantial obstacle to avoid, and therefore require additional attention from the pilots.

The high numbers of accidents associated with crop dusters can partly be attributed to flying at low altitudes and high speeds with the additional possibility of crashing into power lines, trees, towers, and sometimes buildings and mountainsides within the flight area. Many crop duster accidents are not reported unless they resulted in an injury or fatality. Of the nation-wide crop dusting crashes reported in 2008 through November, 63 percent were a direct result of having struck a power line or an associated tower/pole (FAA, 2008b).

Wildland Fire Conditions

The combination of highly flammable fuel, long dry summers, and moderate to steep slopes creates a natural hazard of wildland fires. Wildland fires can result in death, injury, economic losses, and a large public investment in fire fighting efforts. Woodlands and other natural vegetation can be destroyed resulting in the loss of timber, wildlife habitat, scenic quality, and recreation. Soil erosion, sedimentation of fisheries and reservoirs, and downstream flooding can also result. The foothill areas in the eastern and northern portion of the study area tend to have moderate volumes of fuel and have a moderate to high fire hazard (CalFire, 2005).

Wildland Fire protection services for unincorporated Tulare County are provided by the California Department of Forestry and Fire Protection (CalFire). The Tulare Unit manages nine fire stations, one air attack base, and one conservation camp (CalFire, 2005). Tulare County's Office of Emergency Services provides fire and first-responder emergency and emergency medical aid services to all unincorporated areas of the County. The Tulare County Emergency Operations Plan outlines emergency actions that would take place in the event of a major emergency. Similarly, the City of Visalia has its own fire and first-responder services and emergency plans for disaster events and provides information to the public about how to obtain help from areas outside of a disaster zone (Tulare County, 2008; City of Visalia, 2008).

Regulatory Context

Table 4.7-3 provides a brief overview of federal and State hazardous materials laws and regulations with a more detailed discussion to follow.

State

Soil Contamination

Soils having concentrations of contaminants higher than certain acceptable levels must be handled and disposed as hazardous waste when excavated. The California Code of Regulations, Title 22, Section 66261.20-24 contains technical descriptions of characteristics that would classify a soil as a hazardous waste.

**TABLE 4.7-3
FEDERAL AND STATE LAWS AND REGULATIONS REGARDING HAZARDOUS MATERIALS**

Hazardous Materials Management	State and federal laws require detailed planning to ensure that hazardous materials are properly handled, used, stored, and disposed of, and in the event that such materials are accidentally released, to prevent or to mitigate injury to health or the environment. These laws require hazardous materials users to prepare written plans, such as Hazard Communication Plans, Hazardous Materials Business Plans, and Chemical Hygiene Plans. Laws and regulations require hazardous materials users to store these materials appropriately and to train employees to manage them safely. A number of agencies participate in enforcing hazardous materials management requirements.
Hazardous Waste Handling	The California Department of Toxic Substances Control (DTSC) regulates the generation, transportation, treatment, storage, and disposal of hazardous material waste. These laws impose "cradle-to-grave" regulatory systems that require generators of hazardous materials waste to handle it in a manner that protects human health and the environment to the extent possible. The DTSC permits and oversees hazardous materials waste treatment, long-term storage, and disposal facilities.
Hazardous Materials Transportation	The U.S. Department of Transportation (USDOT) regulates the transportation of hazardous materials between states. Within California, the state agencies with primary responsibility for enforcing federal and State regulations, and for responding to transportation emergencies, are the California Highway Patrol (CHP) and the California Department of Transportation (Caltrans). Together, federal and State agencies determine driver-training requirements, load labeling procedures, and container specifications. Although special requirements apply to transporting hazardous materials, requirements for transporting hazardous waste are more stringent, and hazardous waste haulers must be licensed to transport hazardous waste on public roads.
Soil and Groundwater Contamination	The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and associated Superfund Amendments provide the USEPA with the authority to identify hazardous sites, to require site remediation, and to recover the costs of site remediation from polluters. California has enacted similar laws intended to supplement the federal program. The DTSC is primarily responsible for implementing California's Superfund Law.
Emergency Response	California has developed an emergency response plan to coordinate emergency services provided by federal, State, and local government and private agencies. Responding to hazardous materials incidents is one part of this plan. The plan is administered by the State Office of Emergency Services (OES), which coordinates the responses of other agencies, including Cal EPA, CHP, the California Department of Fish and Game (CDFG), the RWQCB, and the local fire department.

Hazardous Materials Management

The California Hazardous Materials Release Response Plans and Inventory Law of 1985 (Business Plan Act) requires that businesses handling hazardous materials prepare a business plan. In January 1996, Cal EPA adopted regulations implementing a Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program). The program has six elements: hazardous waste generators and hazardous waste on-site treatment; underground storage tanks; above ground storage tanks; hazardous materials release response plans and inventories; risk management and prevention programs; and the Unified Fire Code hazardous materials management plans and inventories. The plans are implemented at the local level, and the agency responsible for the implementation of the Unified Program is called the Certified Unified Program Agency (CUPA).

Hazardous Waste Management and Handling

Under the Resource Conservation and Recovery Act (RCRA), individual states may implement their own hazardous waste programs in lieu of RCRA as long as the state program is at least as stringent as federal RCRA requirements. The USEPA must approve state programs intended to

implement federal regulations. In California, the California Environmental Protection Agency (Cal EPA) and the California Department of Toxic Substances Control (DTSC), a department within Cal EPA, regulate the generation, transportation, treatment, storage, and disposal of hazardous waste. The USEPA approved California's RCRA program, called the Hazardous Waste Control Law (HWCL), in 1992. DTSC has primary hazardous material regulatory responsibility, but can delegate enforcement responsibilities to local jurisdictions that enter into agreements with DTSC for the generation, transport, and disposal of hazardous materials under the authority of the HWCL.

The hazardous waste regulations establish criteria for identifying, packaging, and labeling hazardous wastes; prescribe the management of hazardous wastes; establish permit requirements for hazardous waste treatment, storage, disposal, and transportation; and identify hazardous wastes that cannot be disposed of in ordinary landfills. Hazardous waste manifests must be retained by the generator for a minimum of three years. Hazardous waste manifests provide a description of the waste, its intended destination, and regulatory information about the waste. A copy of each manifest must be filed with the State. The generator must match copies of hazardous waste manifests with receipts from treatment, storage, and disposal facilities.

Contaminated soils and other hazardous materials removed from a site during construction or remediation may need to be handled as hazardous waste.

Hazardous Materials Transportation

The State of California has adopted the U.S. Department of Transportation regulations for the intrastate movement of hazardous materials; State regulations are contained in 26 CCR. In addition, the State of California regulates the transportation of hazardous waste originating in the State and passing through the State (26 CCR). Both regulatory programs apply in California.

The two State agencies with primary responsibility for enforcing federal and State regulations and responding to hazardous materials transportation emergencies are the California Highway Patrol (CHP) and the California Department of Transportation (Caltrans). The CHP enforces hazardous material and hazardous waste labeling and packing regulations to prevent leakage and spills of material in transit and to provide detailed information to cleanup crews in the event of an accident. Vehicle and equipment inspection, shipment preparation, container identification, and shipping documentation are the responsibility of the CHP, which conducts regular inspections of licensed transporters to assure regulatory compliance. Caltrans has emergency chemical spill identification teams at as many as 72 locations throughout the State that can respond quickly in the event of a spill.

Common carriers are licensed by the CHP, pursuant to California Vehicle Code Section 32000. This section requires the licensing of every motor (common) carrier who transports, for a fee, in excess of 500 pounds of hazardous materials at one time, and every carrier, if not for hire, who carries more than 1,000 pounds of hazardous material of the type requiring placards.

Every hazardous waste package type used by a hazardous materials shipper must undergo tests that imitate some of the possible rigors of travel. Every package is not put through every test. However, most packages must be able to be kept under running water for a time without leaking; dropped, fully loaded, onto a concrete floor; compressed from both sides for a period of time; subjected to low and high pressure; and frozen and heated alternately.

Hazardous Materials Emergency Response

Pursuant to the Emergency Services Act, California has developed an Emergency Response Plan to coordinate emergency services provided by federal, State, and local governmental agencies and private persons. Response to hazardous materials incidents is one part of this plan. The plan is administered by the State Office of Emergency Services (OES). The OES coordinates the responses of other agencies, including the USEPA, CHP, California Department of Fish and Game (CDFG), the RWQCBs, the local air pollution control districts (in this case, the San Joaquin Valley Air Pollution Control District (SJVAPCD)), and local agencies.

Pursuant to the Business Plan Law, local agencies are required to develop “area plans” for the response to releases of hazardous materials and wastes. These emergency response plans depend to a large extent on the Business Plans submitted by people who handle hazardous materials. An area plan must include pre-emergency planning and procedures for emergency response, notification, and coordination of affected governmental agencies and responsible parties, training, and follow up.

California Department of Forestry and Fire Protection

The California Public Resources Code includes fire safety regulations that restrict the use of equipment that may produce a spark, flame, or fire; require the use of spark arrestors on construction 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 onsite for various types of work in fire prone areas. The Public Resources Code requirements would apply to construction activities in any areas designated by CalFire as a Wildland Area That May Contain Substantial Forest Fire Risks and Hazards pursuant to Section 4125 (LCC, 2009).

Local

Tulare County Environmental Health Division (Proposed Project and Alternatives 2, 3 and 6)

The Tulare County Environmental Health Division’s role is to protect the health and welfare of the general public and the environment through prevention of release and control of hazardous materials and waste. The Environmental Health Division is divided into six programs: Aboveground Storage Tank (AST) Program Spill Control and Countermeasure Plan and requirements; California Accidental Release Prevention (CalARP) Program; Hazardous Materials Release Response Plans & Inventory (Business Plan); Hazardous Waste Generator and Onsite Hazardous Waste Treatment (Tiered Permit); Underground Storage Tank (UST) Program; and the Hazardous Material Inventory Requirements of Article 80 of the Uniform Fire Code (TCHHSA, 2008).

The Environmental Health Division implements the Unified Program at the local government level pursuant to Title 27, Division 1, Subdivision 4, Chapter 1. The Environmental Health Division became the CUPA in December, 1996. The Environmental Health Division is certified by the Cal EPA Secretary to implement the Unified Program specified by Health and Safety Code within Tulare County. The CUPA unifies and consolidates under one roof the various requirements for businesses handling hazardous materials, generating or treating hazardous wastes, or operating underground storage tanks. The overall goal of the CUPA is to reduce duplication of various regulatory requirements involving hazardous materials and wastes, and to simplify compliance for the regulated public (TCHHSA, 2008).

Tulare County Office of Emergency Services (Proposed Project and Alternatives 2, 3 and 6)

Tulare County's Office of Emergency Services provides fire and first-responder emergency and emergency medical aid services to all unincorporated areas of the County. The Tulare County Emergency Operations Plan outlines emergency actions that would take place in the event of a major emergency. Similarly, the City of Visalia has its own fire and first-responder services and emergency plans for disaster events and provides information to the public about how to obtain help from areas outside of a disaster zone (Tulare County, 2008; City of Visalia, 2008).

Tulare County has prepared a Multi-Hazard Functional Plan, addressing earthquakes, dam failures, flood, wildfire, war emergencies, hazardous materials incidences, aircraft crashes, and volcanic eruptions. This plan has named critical facilities to serve as evacuation centers, provide vital services, and provide emergency response. Critical facilities include hospitals, county dispatch facilities, electrical, gas, and telecommunication facilities, water storage and treatment systems, wastewater treatment systems, schools, and other government facilities. The plan also addresses evacuation routes, which include all freeways, highways, and arterials that are located outside of the 100-year floodplain. (Tulare County, 2008).

Tulare County Fire Department (Proposed Project and Alternatives 2, 3 and 6)

All applicants in the County that seek to use blasting as a method to prepare a site for construction activities must obtain a permit from the Tulare County Fire Department. Blasting contractors must provide 24-hour notice to the Department prior to blasting and the blaster must have a certificate of eligibility, and a blasting license (TCFD, 2008).

Tulare County General Plan (Proposed Project and Alternatives 2, 3 and 6)

The following policies have been identified in the Tulare County General Plan Policy Summary document may be applicable to the Proposed Project and alternatives:

Policy 3.G.11: Support the following standards for use and development of areas of varying fire hazard and the County Planning Department is hereby instructed to apply the Fire Hazard Severity Scale as indicated below to proposed developments or uses within wildlands. The following minimum requirements should be met in relation to the three classes of Fire Hazard Severity as discussed within the context of the Safety Element.

- a. Extreme Hazard – extreme caution should be used in allowing development particularly in critical facilities.
- b. Moderate Hazard – strict compliance with existing state statutes and local ordinances should provide adequate fire protection.
- c. Minimum Hazard – development should be allowed, with recommendations for mitigation of hazard by Fire Warden Special conditions, even in areas of “Moderate Hazard,” may exist which may demand special and specified requirements under which development or use of the area should occur.

Policy 3.J.13: Require that proposed developments or uses in wildland areas be subject to review by local fire agencies responsible for protecting development after they are constructed. After a thorough study of the possible hazards and risks that would be associated with completion and the use of the development, the local fire agencies should require that fire prevention and possible suppressions standards be met.

(Tulare County, 2001).

Fresno County Environmental Health Division (Proposed Project and Alternatives 2, 3 and 6)

The Fresno County Environmental Health Division (FCEH) is the CUPA for Fresno County and is responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The FCEH provides oversight for projects that: require hazardous materials business plans; require California accidental release prevention plans or federal risk management plans; operate underground or aboveground storage tanks; generate hazardous waste; or have onsite treatment of hazardous waste(s)/tiered permits (FCEH, 2009).

Fresno County General Plan (Proposed Project and Alternatives 2, 3 and 6)

The following fire hazards and hazardous materials policies have been identified in the Fresno County General Plan Health and Safety Element that may be applicable to the Proposed Project and alternatives:

Policy HS-B.1: 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.2: The County shall ensure that development in high fire hazard areas is designed and constructed in a manner that minimizes the risk from fire hazards and meets all applicable State and County fire standards. Special consideration shall be given to the use of fire-resistant construction in the underside of eaves, balconies, unenclosed roofs and floors, and other similar horizontal surfaces in areas of steep slopes.

Policy HS-B.3: The County shall require that development in high fire hazard areas have fire resistant vegetation, cleared fire breaks separating communities or clusters of structures from native vegetation, or a long-term comprehensive vegetation and fuel management program. Fire hazard reduction measures shall be incorporated into the design of development projects in fire hazard areas.

Policy HS-F.1: The County shall require that facilities that handle hazardous materials or hazardous wastes be designed, constructed, and operated in accordance with applicable hazardous materials and waste management laws and regulations.

Policy HS-F.4: 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.

(Fresno County, 2000).

City of Visalia General Plan (Proposed Project and Alternatives 2, 3 and 6)

The City of Visalia has adopted the Tulare County General Plan Safety Element. Therefore, Policies 3.G.11 and 3.J.13 (See Tulare County General Plan, above) would be applicable to the Proposed Project and alternatives.

City of Farmersville General Plan (Proposed Project)

The City of Farmersville General Plan does not contain goals, policies, and objectives relative to hazards or hazardous materials that would be directly applicable to the Proposed Project (City of Farmersville, 2002).

4.7.2 Significance Criteria

According to Appendix G of the CEQA Guidelines and a review of other similar transmission line project review documents, a significant impact would occur if implementation of the project would:

- a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- c) Produce 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;
- e) For a project located within 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, would the project result in a safety hazard for people residing or working in the project area;
- f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area;

- g) Result in a substantial hazard to existing operations of agricultural aircraft.
- h) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
- i) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.
- j) Result in harmful interference to the operations of cardiac pacemakers.
- k) Result in induced currents that cause harmful electric shocks.

4.7.3 Applicant Proposed Measures

No Applicant Proposed Measures have been identified by SCE for reducing impacts from hazards or hazardous materials.

4.7.4 Impacts and Mitigation Measures

Approach to Analysis

Potential hazards and hazardous materials impacts were evaluated through a review of the Proposed Project description and an understanding of the hazards and risks inherent to the project area and the materials and methods that would be used during construction, operations, and maintenance activities.

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

**Impact 4.7-1: Construction would require the use of certain materials such as fuels, oils, solvents, and other chemical products that, in large quantities, could pose a potential hazard to the public or the environment if improperly used or inadvertently released.
*Less than significant with mitigation (Class II)***

During Proposed Project construction activities, limited quantities of miscellaneous hazardous substances, such as gasoline, diesel fuel, hydraulic fluid, solvents, oils, etc. would be used to fuel and maintain vehicles and motorized equipment. Accidental spill of any of these substances could impact water and/or groundwater quality. Temporary bulk above-ground storage tanks and 55-gallon drums may be used for fueling and maintenance purposes. As with any liquid, during handling and transfer from one container to another, the potential for an accidental release would exist. Depending on the relative hazard of the material, if a spill were to occur of significant quantity, the accidental release could pose a hazard to construction workers, the public, as well as the environment. Therefore, since construction activities would involve use, storage, disposal, and/or transport of significant quantities of hazardous materials, impacts would be potentially significant. Implementation of Mitigation Measures 4.7-1a through 4.7-1e (see below) would reduce these impacts to a less-than-significant level.

Mitigation Measure 4.7-1a: SCE and/or its contractors shall implement construction best management practices including but not limited to the following:

- Follow manufacturer's recommendations on use, storage, and disposal of chemical products used in construction;
- Avoid overtopping construction equipment fuel gas tanks;
- Use tarps and adsorbent pads under vehicles when refueling to contain and capture any spilled fuel;
- During routine maintenance of construction equipment, properly contain and remove grease and oils; and
- Properly dispose of discarded containers of fuels and other chemicals.

Mitigation Measure 4.7-1b: SCE shall prepare a Hazardous Substance Control and Emergency Response Plan (Plan) and implement it during construction to ensure compliance with all applicable federal, State, and local laws and guidelines regarding the handling of hazardous materials. The Plan shall prescribe hazardous material handling procedures to reduce the potential for a spill during construction, or exposure of the workers or public to hazardous materials. The Plan shall also include a discussion of appropriate response actions in the event that hazardous materials are released or encountered during excavation activities. The Plan shall be submitted to the CPUC for review and approval prior to the commencement of construction activities.

Mitigation Measure 4.7-1c: SCE shall prepare and implement a Health and Safety Plan to ensure the health and safety of construction workers and the public during construction. The plan shall include information on the appropriate personal protective equipment to be used during construction.

Mitigation Measure 4.7-1d: SCE shall ensure that a Workers Environmental Awareness Program is established and implemented to communicate environmental concerns and appropriate work practices to all construction field personnel. The training program shall emphasize site-specific physical conditions to improve hazard prevention, and shall include a review of the Health and Safety Plan and the Hazardous Substance Control and Emergency Response Plan. The CPUC mitigation monitor shall attend the first program. SCE shall submit documentation to the CPUC prior to the commencement of construction activities that each worker on the project has undergone this training program.

Mitigation Measure 4.7-1e: SCE shall ensure that oil-absorbent material, tarps, and storage drums shall be used to contain and control any minor releases. Emergency spill supplies and equipment shall be kept at the project staging area and adjacent to all areas of work, and shall be clearly marked. Detailed information for responding to accidental spills and for handling any resulting hazardous materials shall be provided in the project's Hazardous Substance Control and Emergency Response Plan (see Mitigation Measure 4.7-1b), which shall be implemented during construction.

Significance after Mitigation: Less than Significant.

Impact 4.7-2. Blasting activities could pose a hazard to the public. *Less than significant with mitigation* (Class II)

Blasting activities may be required, and could pose a hazard to the public, during road construction, grading, and foundation work in some locations if rock is present. Areas where blasting would be utilized have not been determined; therefore, it is difficult to assess the potential impacts on the public that would be caused by blasting activities. As described in Chapter 2, *Project Description*, prior to blasting, a person licensed by the Federal Bureau of Alcohol, Tobacco, and Firearms would assess the area and take site measurements in order to engineer the blast for a safe and effective explosion. Furthermore, pre-blast notification would be made to the local fire department, residents, utilities, and others potentially affected by blasting operations. Although SCE has committed to taking precautions, implementation of Mitigation Measure 4.7-2 would be required to set forth appropriate performance criteria and to ensure that safety impacts associated with blasting would be reduced to less than significant.

Mitigation Measure 4.7-2: A Blasting Safety Plan for construction shall be submitted to and approved by the CPUC and Tulare County Fire Department prior to construction that includes at a minimum, the following:

- Description of means for transportation and on-site storage and security of explosives in accordance with local, State and federal regulations.
- Minimum acceptable weather conditions for blasting and safety provisions for potential stray current (if electric detonation).
- Traffic control standards and traffic safety measures (if applicable).
- Requirement for provision and use of personal protective equipment.
- Minimum standoff distances and description of blast impact zones and procedures for clearing and controlling access to blast danger.
- Procedures for handling, setting, wiring, and firing explosives. Also, procedures for handling misfires per federal code.
- Type and quantity of explosives and description of detonation device. Sequence and schedule of blasting rounds, including general method of excavation, lift heights, etc.
- Methods of matting or covering of blast area to prevent flyrock and excessive air blast pressure.
- Dust control measures in compliance with applicable air pollution control regulations (to interface with general construction dust control plan).
- Emergency Action Plan to provide emergency telephone numbers and directions to medical facilities. Procedures for action in the event of injury.
- Material Safety Data Sheets for each explosive or other hazardous materials to be used.
- Evidence of licensing, experience, and qualifications of blasters.

- Description of insurance for the blasting work.

Significance after Mitigation: Less than Significant.

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.

Impact 4.7-3: Construction activities could release previously unidentified hazardous materials into the environment. *Less than significant with mitigation (Class II)*

It is not anticipated that construction or operation of the Proposed Project would create a significant hazard to the public due to project upset or accidental release of hazardous materials into the environment. Accidental release of hazardous materials routinely used during construction activities are addressed under Impact 4.7-1, above. No existing contamination has been identified in the Proposed Project ROW, although a remediated spill site exists at the Rector Substation. The potential mobilization of hazardous materials at previously identified and unidentified release sites would be relatively low. However, the potential presence of residual pesticide and herbicide contamination of the soil and/or groundwater in the agricultural areas along the Proposed Project alignment represents a potentially significant impact due to the potential health hazards to construction workers and the public stemming from exposure to pesticide or herbicide contaminated soil and/or groundwater.

Pursuant to Mitigation Measure 4.7-1c (above), SCE would implement appropriate safety measures to ensure the safety of construction workers. In addition, implementation of Mitigation Measure 4.7-3a (below), which requires provisions to be implemented if any subsurface hazardous materials are identified during construction, would ensure that potential impacts associated with mobilizing hazardous materials into the environment at previously unidentified release sites would be less than significant. However, implementation of Mitigation Measure 4.7-3a may not be effective for pesticides and herbicides because these contaminants are not always readily apparent by visual or olfactory indicators. Therefore, implementation of Mitigation Measure 4.7-3b, which requires testing for residual pesticides/herbicides in agricultural areas prior to subsurface ground disturbance and, if necessary, implementation of remediation procedures, would also be required to reduce impacts to a less than significant level. For mitigation to reduce impacts related to existing contaminated groundwater, refer to Section 4.8, *Hydrology and Water Quality*.

Mitigation Measure 4.7-3a: SCE's Hazardous Substance Control and Emergency Response Plan (as required under Mitigation Measure 4.7-1b) shall include provisions that would be implemented if any subsurface hazardous materials are encountered during construction. Provisions outlined in the plan shall include immediately stopping work in the contaminated area and contacting appropriate resource agencies, including the CPUC designated monitor, upon discovery of subsurface hazardous materials. The plan shall include the phone numbers of County and State agencies and primary, secondary, and final

cleanup procedures. The Hazardous Substance Control and Emergency Response Plan shall be submitted to the CPUC for review and approval prior to the commencement of construction activities.

Mitigation Measure 4.7-3b: SCE shall develop and implement a Soil Sampling and Analysis Plan to determine the presence and extent of any residual herbicides, pesticides, and fumigants on currently or historically-farmed land in agricultural areas that would be disturbed during construction of the Proposed Project. The Plan shall be prepared in consultation with the County Agricultural Commission, and the work shall be conducted by an appropriate California-licensed professional and samples sent to a California Certified laboratory. At a minimum, the Plan shall document the areas proposed for sampling, the procedures for sample collection, the laboratory analytical methods to be used, and the pertinent regulatory threshold levels for determining proper excavation, handling, and, if necessary, treatment or disposal of any contaminated soils. The Plan shall be submitted to the CPUC for review and approval at least 60 days before construction. Results of the laboratory testing and recommended resolutions for excavation, handling, dust control, and treatment/disposal of material found to exceed regulatory requirements shall be submitted to the CPUC prior to construction.

Significance after Mitigation: Less than Significant.

c) Produce hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

Impact 4.7-4: Construction activities could release hazardous materials within the vicinity of existing schools. *Less than significant with mitigation (Class II)*

Kaweah High School and Sequoia Union Elementary School are both located approximately 1,000 feet (approximately 0.20 mile) from the Proposed Project ROW. Construction activities along the Proposed Project alignment would not be expected to result in releases of hazardous emissions, substances, or waste that might impact either of the schools because SCE would be required to adhere to Mitigation Measures 4.7-1a through 4.7-1e and 4.7-2 (see above), including the development and implementation of hazardous materials best management practices, a Hazardous Substance Control and Emergency Response Plan, a Health and Safety Plan, and a Blasting Safety Plan. With implementation of Mitigation Measures 4.7-1a through 4.7-1e and 4.7-2, the Proposed Project would result in less than significant impacts to nearby schools.

Mitigation Measure 4.7-4: Implement Mitigation Measures 4.7-1a through 4.7-1e and 4.7-2.

Significance after Mitigation: Less than Significant.

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.

Impact 4.7-5: Construction activities at Rector Substation could release residual contamination associated with the closed Rector Substation spill site into the environment. Less than significant with mitigation (Class II)

The Rector Substation, where modifications associated with the Proposed Project are proposed to occur, is a RWQCB identified hazardous waste site where a spill of transformer oil had contaminated soil with lead, petroleum hydrocarbons, and PCBs. The contaminated soil was excavated and disposed of during February 2003, and the case has since been closed. The potential for a release and mobilization of previously unidentified residual contamination during construction activities would be relatively low. However, implementation of Mitigation Measure 4.7-3a, which would require SCE to prepare and implement a Hazardous Substance Control and Emergency Response Plan, would ensure that potential hazard impacts related to the Rector Substation spill site would be minimized and would be less than significant.

Mitigation Measure 4.7-5: Implement Mitigation Measure 4.7-3a.

Significance after Mitigation: Less than Significant.

e) For a project located within 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, would the project result in a safety hazard for people residing or working in the project area.

No general aviation airports are located within two miles of the Proposed Project (the closest airport is Woodlake Airport, located approximately 2.1 miles from the closest portion of the Proposed Project corridor); therefore, no impact would occur (No Impact).

f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area.

There are no known private airstrips located within two miles of the Proposed Project corridor. Accordingly, there would be no private airstrip safety hazard impacts. No impact would occur (No Impact).

g) Result in a substantial hazard to existing operations of agricultural aircraft.

Impact 4.7-6: The Proposed Project could create a safety hazard to aerial spray applicators. *Less than significant with mitigation (Class II)*

The primary reason that transmission lines and towers are a safety hazard for aerial applicators is because they present an additional obstacle for pilots to avoid. The following discussion describes the specific circumstances that present a safety hazard to aerial applicators. New transmission lines are especially hazardous when they are: diagonally oriented, relative to field boundaries; exist side-by-side with other transmission lines; create an angle perpendicular to an existing line; constructed within a new utility ROW; and when they are not clearly visible.

The Proposed Project would represent a potentially significant hazard to aerial sprayers because it would create a right angle to the existing Big Creek-Rector transmission lines within an agricultural use, and it would result in approximately 15.5 miles of new 120-foot to 160-foot poles/towers and conductors within or immediately adjacent to existing agricultural fields, orchards, and vineyards where no such structures currently exist.

Because of the infrequent nature of aerial spraying in the study area, pilots may fly over agricultural fields that they have not been to in six months or longer. In those cases, pilots could have no previous knowledge that a new transmission line and towers have been constructed, which creates an increased danger for pilots. To ensure pilot notification of the new transmission line, the following mitigation measure shall be implemented.

Mitigation Measure 4.7-6: SCE shall consult with landowners to determine which aerial applicators cover agricultural parcels within one mile of the approved transmission line ROW. SCE shall provide written notification to all aerial applicators stating when the new transmission line and towers would be erected. SCE shall also provide all aerial applicators that operate in the area recent aerial photos or topographic maps clearly showing the location of the new lines and towers, as well as all existing SCE lines and towers within 10 miles of the approved corridor. The photos or maps shall also indicate the heights of the towers and conductors. SCE shall provide documentation of compliance to the CPUC.

Significance after Mitigation: Less than Significant.

h) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

Impact 4.7-7: Construction of the Proposed Project could interfere with an emergency response or evacuation plan. *Less than significant with mitigation (Class II)*

Several private and public roadways, including Highways 63 and 198, that would be crossed by the Proposed Project would likely need to be temporarily closed during transmission line stringing activities. These roadways could be used by people evacuating the area during an emergency.

However, implementation of Mitigation Measure 4.14-1b requires SCE and/or its contractors to coordinate all construction activities with emergency service providers in and along the Proposed Project alignment to minimize disruption to emergency vehicle access (see Section 4.14, *Transportation and Traffic*). Specific requirements are identified under Mitigation Measure 4.14-1b and 4.12-2 (see Section 4.12, *Public Services*). Implementation of these measures would ensure that potential impacts associated with an interference with an emergency response or evacuation would be mitigated to less than significant levels.

Mitigation Measure 4.7-7: Implement Mitigation Measures 4.14-1b and 4.12-2.

Significance after Mitigation: Less than Significant.

i) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

Impact 4.7-8: Construction activities could ignite dry vegetation and start a fire. *Less than significant with mitigation (Class II)*

The eastern portion of the Proposed Project would be constructed in an open area that that contains grass, bushes, and trees, which is susceptible to wildland fires. Heat or sparks from construction and/or maintenance vehicles/equipment have the potential to ignite dry vegetation and cause a fire. Therefore, depending on the time of year and location of construction and maintenance activities, a high to moderate fire hazard would likely exist during construction and maintenance of the Proposed Project. However, implementation of Mitigation Measure 4.7-8 would reduce the potentially significant wildland fire impact associated with the construction and maintenance of the Proposed Project to less than significant.

Mitigation Measure 4.7-8: SCE and/or its contractors shall have water tanks and/or water trucks sited/available in the project area for fire protection. All construction and maintenance vehicles shall have fire suppression equipment. Construction personnel shall be required to park vehicles away from dry vegetation. Prior to construction, SCE shall contact and coordinate with the California Department of Forestry (CalFire) and applicable local fire departments (i.e., Tulare County, City of Visalia, and City of Farmersville) to determine the appropriate amounts of fire equipment to be carried on the vehicles and appropriate locations for the water tanks if water trucks are not used. SCE shall submit verification of its consultation with CalFire and the local fire departments to the CPUC.

Significance after Mitigation: Less than Significant.

Impact 4.7-9: Operation of the transmission lines could increase the probability of a wildfire. *Less than significant* (Class III)

During operations, the Proposed Project could increase the risk of wildland fires in the eastern portion of the proposed new transmission line ROW. Electrical lines can start a fire if an object, such as a tree limb, kite, Mylar balloon, etc., simultaneously contacts the transmission line conductors and a second object, such as the ground or a portion of the supporting tower; if two conductors make contact; or if dust and/or dirt builds up on insulators such that a conductive path to a portion of the tower is created.

Most of the fires resulting from electrical facilities originate from low voltage distribution facilities. The energized conductors that make up distribution and lower-voltage transmission lines are much closer together (i.e., as close as two feet) compared with higher-voltage transmission lines, such as those associated with the Proposed Project, which would be separated by as much as 18 feet. Given the relative closeness of the distribution and lower voltage transmission conductors, fallen or wind-blown tree branches and debris can more easily come into contact with and bridge two distribution conductor phases,² which can cause electrical arcs³ that can set fire to woody debris. Because higher voltage transmission line conductors are spaced much further apart, it is extremely rare for them to cause fires resulting from arcing due to fallen or wind-blown tree branches and debris. Arcing from a single conductor to ground through vegetation contact can also occur, but the conductors of the Proposed Project would generally be much further from the ground than they would be from one another, thus the chance for electrical arcing to occur would be extremely rare. To minimize the risk of trees falling on the power line or other accidental ignition of a wildland fire from the power line, SCE would follow State vegetation and tree clearing requirements, including CPUC General Order 95, Public Resources Code Section 4293.

Given proper ROW management, arcing between conductor phases is more likely than between a conductor and the ground. System component failures and accidents during maintenance activities can also cause line faults that result in arcing on transmission lines of any voltage. Distribution and transmission lines at lower voltages are also subject to conductor-to-conductor contact, which can occur when extremely high winds force two conductors on a single pole to oscillate so excessively that they contact one another. This contact can result in arcing (sparks) that can ignite nearby vegetation. Given the spacing of the conductors of the Proposed Project, the opportunity for this sort of arcing is very limited.

High powered transmission lines, such as the one that would be constructed under the Proposed Project, have protection and control systems that are designed to detect faults, such as arcing from debris contacting the line, and rapidly shut off power flow in 1/60 to 3/60 of a second. In comparison, distribution systems are designed to be more tolerant to line faults in an effort to

² Multiple conducting wires on a single transmission or distribution line are clustered in groups of three wires that carry currents alternating at different phases. This arrangement has the safety effect of cancelling much of the electric and magnetic field that would otherwise be created.

³ Electrical arcing is an electric discharge that occurs when electrons are able to jump a gap in a circuit.

limit disruption of service. Distribution line protection and control systems allow faults to last longer (in the hopes of the fault clearing) and are sometimes set to automatically reenergize a faulted line after a very brief delay (a second or so) in the event that the fault has cleared. If a fault is related to debris tangled in the conductors, immediate re-energizing can cause repeated sparks and ignite nearby vegetation. In addition, distribution lines are mounted with devices, such as transformers and capacitors, which can fail in an explosive manner resulting in an ignition of nearby vegetation. Transmission lines are not mounted with these devices because transmission lines are not used to directly serve customer loads.

Both distribution and transmission systems are designed to withstand high winds, and it is extremely rare for higher-voltage transmission structures to blow over. When this rare event does occur, the protection system on a transmission line is designed to shut off power flow in a fraction of a second. However, a fraction of a second can be enough for an energized conductor to cause sparks and ignite nearby vegetation. Distribution structure failures are also infrequent but due to their placement in narrower corridors in close proximity to trees and other tall vegetation they may be pushed down in storms by wind-blown trees.

Wildfires related to power lines can also be ignited by wildlife, particularly large birds. A bird-caused flashover (i.e., an unintended electric arc) is more probable on low-voltage distribution and transmission lines where conductors are closely spaced. Birds perched on power poles or flying between poles can simultaneously contact two conductors, causing an electrical flashover. This electrocutes the bird and occasionally causes the feathers to catch fire. The bird may fall to the ground and ignite nearby vegetation. However, bird-caused flashovers are highly unlikely to occur with the Proposed Project, with energized 220 kV conductors at minimum separation distances of 18 feet vertically and 24 feet horizontally. These distances are at least 10 feet greater than the wingspan of the largest bird species in the project vicinity (see Section 4.4, *Biological Resources*, for a complete discussion of the risk of bird electrocutions).

The risk of ignitions and the risk of damage from a Proposed Project-related ignition are low. In addition, SCE would be required to implement State vegetation and tree clearing requirements, including CPUC General Order 95, Public Resources Code Section 4293. Also, SCE would inspect all components of the proposed transmission line at least annually for corrosion, equipment misalignment, loose fittings, and other common mechanical problems, by either air or ground. Consequently, implementation of the Proposed Project would not result in a significant risk of loss, injury, or death involving wildland fires; therefore, operational impacts would be less than significant.

Mitigation: None required.

j) Result in harmful interference to the operations of cardiac pacemakers.

Impact 4.7-10: Electric fields associated with the operation of the Proposed Project could affect cardiac pacemakers, resulting in ventricular fibrillation. *Less than significant* (Class III)

The electric field associated with the proposed new transmission lines may be of sufficient magnitude to impact operation of a few older model pacemakers, thus causing the pacemaker to revert to asynchronous pacing. Cardiovascular specialists do not consider prolonged asynchronous pacing to be a problem; periods of operation in this mode are commonly induced by cardiologists to check pacemaker performance. However, with dual-chamber pacemakers, inappropriate pacing has been documented before unit reversion to asynchronous mode (EPRI, 1997).

Depending on the manufacturer and design, the magnetic field threshold for pacemaker interference, including the possibility of inappropriate pacing, is in the range of two to 12 Gauss (G), and the electric field threshold is about 1.5 kV/meter for some of the more sensitive dual-chamber units, and above two kV/m for older ventricular units (EPRI, 1997). Based on magnetic field data included in SCE's Application (SCE, 2008) and electric field data for a similar voltage transmission line (SES, 2008), it is estimated that the maximum magnetic and electric fields that would occur under the proposed transmission lines would be approximately 0.04 to 0.05 G and 2.3 kV/m, respectively.

The function of some pacemakers could be altered by exposure to electric fields that would be generated in the immediate vicinity of the Proposed Project (i.e., near the ground surface within approximately 30 feet of the transmission line centerline), potentially resulting in inaccurate detections by the pacemaker of normal cardiac signals or resulting in inappropriate behavior, until the field strength is reduced by the individual leaving the immediate area. However, the biological consequences of transient, reversible pacemaker malfunction are mostly benign because most modern units revert to a fixed-rate pacing mode, which is not harmful. There are exceptions, which include: individuals that are completely dependent on their pacemakers for maintaining all cardiac rhythms; individuals whose pacemakers function in inhibited modes where field interference could severely compromise cardiovascular function; and individuals with compromised coronary circulation who are prone to episodes of reduced cardiac blood flow (EPRI, 1997).

Such episodes that would occur at the same time that the pacing would become fixed-rate or irregular are dangerous, because these individuals would be more easily triggered into ventricular fibrillation. The precise coincidence of an individual to be exposed to high electric fields within the transmission line ROW and a biological need of that individual for the full function of his/her pacemaker would appear, in general, to be a rare event. However, given the limited data available on this potential effect, a probability of such a coincidence to occur cannot be estimated.

Given the rarity of an exposure event to occur simultaneous with a biological need for full function pacemakers, it would be unlikely that the transmission line's electric field would cause a harmful interference to the operations of implanted cardiac devices; therefore, impacts would be less than significant.

Mitigation: None required.

k) Result in induced currents that cause harmful electric shocks.

Impact 4.7-11: Induced currents associated with operation of the Proposed Project could generate electrical shocks. *Less than significant with mitigation (Class II)*

Power line fields can induce voltages and currents on conductive objects, such as metal roofs or buildings, fences, construction equipment, and vehicles. Transmission lines are designed to limit the short circuit current, from conductive items beneath the line, to a safe level (less than five milliamperes). When a person or animal comes in contact with a conductive object a perceptible current or small electric shock may occur. These small electric shocks cause no physiological harm; however, they may present a nuisance.

A more hazardous situation would exist if a tall mobile piece of equipment would be brought within the transmission line ROW in close proximity to the electrified transmission line or other electrified equipment. There are numerous existing wells that are in the proposed transmission line ROW and the potential exists that future maintenance of those wells would require the use of a boom truck or other similar rig that would be at least 35 feet tall. Per identified working clearances for power lines developed by the California Department of Industrial Relations, Division of Safety and Health (through the California Division of Occupational Safety and Health (Cal OSHA) Title 8 of Section 2946), operations of such equipment in the immediate vicinity of the energized transmission line would pose a safety hazard and would not be acceptable under the line or immediately adjacent to the line (e.g., within 17 feet of either side of the line for a 35 foot tall boom type machine).

Impacts related to electric shocks would be mitigated to a less than significant level with implementation of Mitigation Measures 4.7-11a and 4.7-11b.

Mitigation Measure 4.7-11a: As part of the siting and construction process, SCE shall identify objects, such as fences, metal buildings, and pipelines, that are within and near the ROW that have the potential for induced voltages and shall implement electrical grounding of metallic objects in accordance with SCE's standards. The identification of objects shall document the threshold electric field strength and metallic object size at which grounding becomes necessary.

Mitigation Measure 4.7-11b: Prior to construction, SCE shall coordinate with affected property owners to conduct an inventory of the groundwater wells that are within the proposed ROW. Using the working clearances identified in Cal OSHA Title 8 of the California Code Section 2946, and considering the minimum height of equipment that would be required to perform maintenance activities as well as the maximum line sag at the well locations, SCE shall identify wells that would not have the required minimum ground clearance to perform any necessary well maintenance and shall engage a qualified water well drilling contractor to relocate those identified wells to another location. Well relocation shall include all drilling and well development activities, including relocating the associated pumping equipment and pipeline to the new location. Abandonment of the old

wells shall be conducted in accordance with all applicable well standards (DWR, 1991). All wells shall be relocated prior to electrifying the transmission line.

Significance after Mitigation: Less than Significant.

4.7.5 Cumulative Impacts

The Proposed Project would increase the hazard potential in the project area. However, it is unlikely that the Proposed Project, combined with the other projects listed in Section 3.6, *Cumulative Projects*, would contribute to a significant cumulative hazards or hazardous materials related impact because impacts related to hazards and hazardous materials are generally site specific. Therefore, cumulative impacts would only be likely to occur with other projects that are constructed within the immediate vicinity of the Proposed Project.

Only three of the cumulative projects identified in Section 3.6, *Cumulative Projects*, would be within the immediate vicinity of the Proposed Project, including two road widening projects and a specific plan. These types of projects, combined with the Proposed Project, would not result in a cumulative impact even if all of the projects were to be constructed simultaneously. In addition, Mitigation Measures 4.7-1a through 4.7-1e, 4.7-3a, 4.7-3b, and 4.7-8 would ensure that the Proposed Project's contribution to construction-related hazards and hazardous materials cumulative impacts would be less than cumulatively considerable (i.e., because the Proposed Project's contribution to any potential cumulative impact would be site specific and would be mitigated). Therefore, cumulative impacts related to hazards and hazardous materials would be less than significant (Class II).

4.7.6 Alternatives

No Project Alternative

Under the No Project Alternative, the Proposed Project would not be implemented; therefore, no hazards or hazardous materials related impacts would occur (No Impact).

Alternative 2

Similar to the Proposed Project, construction activities associated with Alternative 2 would require mitigation to ensure that impacts associated with the routine use of hazardous materials, accidental release of hazardous materials, the release and mobilization of previously unidentified residual contamination, blasting activities, interference with an adopted emergency response plan,

and electric shock hazards would be less than significant. Therefore, implementation of Mitigation Measures 4.7-1a through 4.7-1e, 4.7-2, 4.7-3a and 4.7-3b, 4.7-7 and 4.7-11 would reduce impacts from Alternative 2 to less than significant (Class II). Under Alternative 2, these impacts would be the same as the Proposed Project.

Unlike the Proposed Project, there are no schools within one-quarter mile of the alignment for Alternative 2. Therefore, no school related impacts would occur under Alternative 2 (No Impact). The Proposed Project would be more adverse compared to Alternative 2 with regard to hazards impacts to schools.

There are no general aviation airports or airstrips located within two miles of the alignment for Alternative 2; therefore, as with the Proposed Project, no impacts would occur under Alternative 2 (No Impact).

Alternative 2 would result in a shorter distance of new structures and transmission lines in existing agricultural areas where none exist currently compared to the Proposed Project. Therefore, the hazard to aerial sprayers under Alternative 2 would be slightly less severe than would occur under the Proposed Project. Therefore, this impact would remain less than significant with implementation of Mitigation Measure 4.7-6 (Class II).

As with the Proposed Project, the electric fields associated with the new transmission lines under Alternative 2 may be of sufficient magnitude to impact operation of some pacemakers. Given the rarity of an exposure event to occur simultaneous with a biological need for full function pacemakers, it would be unlikely that the transmission line's electric field would cause a harmful interference to the operations of cardiac pacemakers; therefore, impacts under Alternative 2 would be the same as those identified for the Proposed Project, less than significant (Class III).

Compared to the Proposed Project, the alignment for Alternative 2 would be located in approximately four additional miles of open area that contains grass, bushes, and trees that would be susceptible to wildfire depending on the time of year. Therefore, the construction and operational wildfire hazard would be slightly higher under Alternative 2 compared to the Proposed Project. However, implementation of Mitigation Measure 4.7-8 would reduce impacts to less than significant (Class II).

Alternative 3

Similar to the Proposed Project, construction activities associated with Alternative 3 would require mitigation to ensure that impacts associated with the routine use of hazardous materials, accidental release of hazardous materials, the release and mobilization of previously unidentified residual contamination, interference with an adopted emergency response plan, and electric shock hazards would be less than significant. Therefore, with implementation of Mitigation Measures 4.7-1a through 4.7-1e, 4.7-2, 4.7-3a and 4.7-3b, 4.7-7 and 4.7-11 these impacts would

be less than significant (Class II). Under Alternative 3, these impacts would be the same as the Proposed Project.

Unlike the Proposed Project, there are no schools within one-quarter mile of the alignment for Alternative 3. Therefore, no school related impacts would occur under Alternative 3 (No Impact). The Proposed Project would be more adverse compared to Alternative 3 with regard to hazards impacts to schools.

There are no general aviation airports or airstrips located within two miles of the alignment for Alternative 3; therefore, as with the Proposed Project, no impacts would occur under Alternative 3 (No Impact).

Although Alternative 3 would result in a longer distance of replaced side-by-side towers with taller structures compared to the Proposed Project, it would result in a much shorter distance of new structures in existing agricultural areas where none exist currently compared to the Proposed Project. Therefore, the hazard to aerial sprayers under Alternative 3 is not as severe as would occur under the Proposed Project. However, Mitigation Measure 4.7-6 would still be required to reduce the impact to a less than significant level (Class II).

As with the Proposed Project, the electric fields associated with the new transmission lines under Alternative 3 may be of sufficient magnitude to impact operation of some pacemakers. Given the rarity of an exposure event to occur simultaneous with a biological need for full function pacemakers, it would be unlikely that the transmission line's electric field would cause a harmful interference to the operations of cardiac pacemakers; therefore, impacts under Alternative 3 would be the same as those identified for the Proposed Project, less than significant (Class III).

Compared to the Proposed Project, the alignment for Alternative 3 would be located in approximately eight additional miles of open area that contains rocky terrain, grass, bushes, and trees, including some areas that are densely wooded and some areas that may require blasting for the development of tower foundations. These areas would be susceptible to wildfires depending on the time of year. Therefore, construction blasting and wildfire impacts and operational wildfire impacts would be more adverse under Alternative 3 compared to those for the Proposed Project. However, with implementation of Mitigation Measure 4.7-8, impacts would be less than significant (Class II).

Alternative 6

Similar to the Proposed Project, construction activities associated with Alternative 6 would require mitigation to ensure that impacts associated with the routine use of hazardous materials, accidental release of hazardous materials, the release and mobilization of previously unidentified residual contamination, interference with an adopted emergency response plan, and electric shock hazards would be less than significant. Implementation of Mitigation Measures 4.7-1a through

4.7-1e, 4.7-2, 4.7-3a and 4.7-3b, 4.7-7 and 4.7-11 would reduce these impacts to less than significant (Class II). Under Alternative 6, these impacts would be the same as those under the Proposed Project.

Unlike the Proposed Project, there are no schools within one-quarter mile of the alignment for Alternative 6. Therefore, no school related impacts would occur under Alternative 6 (No Impact). The Proposed Project would be more adverse compared to Alternative 6 with regard to hazards impacts to schools.

Alternative 6 would result in a shorter distance of new structures in existing agricultural areas where none exist currently compared to the Proposed Project. Therefore, the hazard to aerial sprayers under Alternative 6 would be slightly less severe than would occur under the Proposed Project. However, this impact would remain less than significant with implementation of Mitigation Measure 4.7-6 (Class II).

As with the Proposed Project, the electric fields associated with the new transmission lines under Alternative 3 may be of sufficient magnitude to impact operation of some pacemakers. Given the rarity of an exposure event to occur simultaneous with a biological need for full function pacemakers, it would be unlikely that the transmission line's electric field would cause a harmful interference to the operations of cardiac pacemakers; therefore, impacts under Alternative 3 would be the same as those identified for the Proposed Project, less than significant (Class III).

Compared to the Proposed Project, the alignment for Alternative 6 would be located in approximately four additional miles of open area that contains rocky terrain, grass, bushes, and trees that would be susceptible to wildfire depending on the time of year. Therefore, the construction and operation wildfire hazard would be more adverse under Alternative 6 compared to the Proposed Project. However, implementation of Mitigation Measure 4.7-8 would still reduce these impacts to a less than significant level (Class II).

Impact 4.7-ALT6-1: Alternative 6 could potentially impact airport operations at the Woodlake Airport. *Less than significant (Class III)*

The Woodlake Airport is located within approximately 1.5 miles of Alternative 6. The alternative would involve construction of towers that would be as tall as 160 feet. The proposed transmission line design would comply with Federal Aviation Administration (FAA) procedures as final tower locations, types, and heights would be submitted to the FAA for it to make a hazard determination. Additionally, a Notice of Proposed Construction or Alteration form (FAA Form 7460-1) would be filed with the FAA, as required. The FAA can require modifications to the alternative, such as installation of high-visibility devices. Because Alternative 6 would comply with FAA aviation safety rules and procedures, Alternative 6 would not result in significant aviation safety hazards; therefore, impacts would be less than significant.

Mitigation: None required.

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