5.8 HUMAN HEALTH AND SAFETY

This section discusses the existing and potential human health and safety risks associated with exposure to hazardous materials and flood hazards on the west slope of El Dorado County, as well as transportation safety, electromagnetic fields, naturally occurring asbestos, and wildland fire. Other human health and safety issues, including airport safety, seismic, geologic, and avalanche hazards, and toxic air emissions, are discussed in Section 5.1, Land Use and Housing; Section 5.9, Geology, Soils, and Mineral Resources; and Section 5.11, Air Quality, respectively.

The analysis in this section is based on consultation with public service agencies, including the County Environmental Management Department (EMD), the County Department of Transportation (DOT), and the California Department of Forestry and Fire Protection (CDF). Analysis methodology is further discussed under each subsection.

5.8.1 HAZARDOUS MATERIALS

A "hazardous material" is a substance or combination of substances that, because of its quantity, concentration, or physical, chemical, or infectious characteristics, may pose a potential hazard to human health or the environment when handled improperly. "Hazardous waste" is a hazardous material that either has no use or reuse value and is intended to be discarded, or is recyclable. According to the U.S. Environmental Protection Agency (EPA), hazardous waste exhibits one or more of these characteristics: ignitability, corrosivity, reactivity, and toxicity (EPA 1997).

The proposed land use designation maps for each of the proposed alternatives are qualitatively evaluated for land use incompatibilities that may result in increased risk of exposure of residents to hazardous materials. As directed by the Writ of Mandate for the 1996 General Plan EIR, impacts related to illegal disposal of household hazardous wastes are analyzed based on information on related County programs.

Existing plans and programs are also evaluated along with existing regulations and standards, in order to assess impacts related to the increased use of hazardous materials that would result from the projected increase in development and population in the county. Specific issues analyzed include the routine use and accidental release of hazardous materials.

EXISTING CONDITIONS

Physical Environment

Hazardous Waste Generation

Hazardous wastes generated in El Dorado County originate from small businesses, industry, households, and government. In 1986, an estimated 3,708 tons of hazardous waste were generated. There are no current estimates of total hazardous waste generation in the County, although in 1990 it was predicted to grow to over 9,000 tons by 2000 (EDCCDD and George Wheeldon and Associates 1990). The majority (90% or more) of the hazardous waste stream in El Dorado County consists of waste oil, paint, and lead acid car batteries (EMD 2002a). (Please refer to Table 5.6-2 in Section 5.6, Utilities, for estimates of household hazardous waste generated in the county.)

Hazardous Waste Generated by Small Business, Industry, and Government

While hazardous waste is generated by a variety of land uses, small businesses and industry account for most of the hazardous waste generated in El Dorado County. Generators are classified based on the quantity of hazardous materials generated. Small businesses and government facilities may be classified as Small Quantity Generators (SQGs) or Conditionally Exempt Small Quantity Generators (CESQGs). Industries are typically classified as SQGs or Large Quantity Generators (LQGs). (Please refer to Regulatory/Planning Environment below for more information about these classifications.)

EPA maintains the Envirofacts Data Warehouse, which compiles information on companies that handle hazardous materials and sites containing hazardous wastes. As of January 25, 2003, there were 130 business locations and government facilities in the county that were registered as hazardous waste handlers in EPA's database. These 130 registered handlers included certain types of generators, transporters, treaters, storers, and/or disposers of hazardous waste. Of the 130 registered handlers, nine facilities were LQGs and 106 were SQGs (EPA 2003).

The County EMD also tracks generators of hazardous waste. EMD collects information on the types and quantities of waste generated and stored via the Certified Unified Program business plan inventory program. Hazardous waste contingency plans are collected from all generators, and generators storing more than 55 gallons, 500 pounds, or 200 cubic feet of hazardous waste must also submit inventories. As of October 2002, there were 235 hazardous

waste-generating facilities on the west slope of the county that had been registered with EMD. These include both private and public facilities (EMD 2002b).

Household Hazardous Waste

Hazardous wastes generated by residential uses are referred to as household hazardous waste. Households often discard many common items that contain hazardous constituents, such as paints, stains, oven cleaner, motor oil, and pesticides. Some items that contain hazardous materials, such as batteries, thermostats, lamps, televisions, and computer monitors, are considered lower risk hazardous wastes. These items are classified by EPA and the California Department of Toxic Substances Control (DTSC) as Universal Waste, a type of waste that is considered less hazardous to handle. Individuals generating these types of waste from their homes are exempt from the hazardous waste regulations. The average household in the United States generates about 20 pounds of household hazardous waste per year (EPA 2003).

Hazardous Materials Storage

There are currently 406 hazardous materials-storing facilities on the west slope that are registered by EMD (EMD 2002b). The hazardous materials may be stored in aboveground storage tanks (ASTs), underground storage tanks (USTs), drums, and other types of containers. Typically, USTs are used by businesses, such as gasoline stations. Many households store heating fuel such as propane in ASTs. Because residences are exempt from reporting the use of hazardous materials, many ASTs and USTs are not registered with the County or other public agencies.

Hazardous Waste Collection and Recycling

Businesses classified as SQGs and LQGs are required to ship their hazardous wastes via a hauler registered with the State of California to a licensed hazardous waste treatment, storage, and/or disposal (TSD) facility. All solid waste collected by the private solid waste haulers must now be screened for hazardous waste at the MRFs. This entails inspecting random loads and removing any hazardous waste noted (EMD 2002a).

Households and CESQGs may participate in the County's household hazardous waste collection programs, which were established by the County to reduce the risks of inappropriate disposal of household hazardous waste in landfills or incinerators. Various collection methods for hazardous wastes exist in the county for the different sources and types of hazardous wastes. Households may bring household hazardous waste to one of three permanent household hazardous waste collection centers. The permanent centers are located at the

South Lake Tahoe Material Recovery Facility (MRF), the Diamond Springs MRF, and the El Dorado Hills Fire Department. CESQGs may also take their hazardous wastes to the two MRFs.

There are now 21 public waste oil collection sites, funded in part by the County, that are open at least one day a week. These facilities accept uncommon items such as expired or banned pesticides, herbicides, solvents, and paint strippers. In addition to the permanent collection facilities, EMD operates several temporary household hazardous waste collection events in outlying communities, including Meeks Bay, Mt. Aukum, Swansboro, El Dorado, and the Georgetown Divide (EMD 2002a). The amount of household hazardous wastes collected by the County through its various collection programs are shown in Table 5.8-1 below.

Table 5.8-1
Household Hazardous Waste Collected by the County

Year [1]	Household Hazardous Waste Collected (tons) [2]	Percentage of Households Participating [3]
2002	250	11.3
2001	278	10.6
2000	199	9.8
1999	169	5.3
1998	126	3.7
1997	266[4]	6.0
1996	75	5.4
1995	78	5.1

[1] Year shown is the ending year of the fiscal year. Data is collected on fiscal year basis.
[2] Source of household hazardous wastes are residential homes and CESQGs. The actual amount of hazardous waste may be lower than the amount shown because the tonnage includes the weight of containers.
[3] Based on number of people who have dropped off materials at the County collection programs and events. Each person represents a household.
[3] Following a flooding event, FEMA provided funds to assist in cleanup operations that encouraged participation and increased the amount of hazardous waste collected.

Source: Halverson, pers. comm., 2003; Johnston, pers. comm., 2003

Household hazardous wastes collected by the above methods are recycled and reused to the extent possible. The remaining hazardous wastes are hauled to offsite locations for treatment and disposal, as discussed below.

Hazardous Materials Transport and Disposal

Currently there are no TSDs within El Dorado County. Hazardous wastes are collected and transported outside the county for disposal. Various collection methods for hazardous wastes exist for the different sources and types of hazardous wastes. LQGs typically hire a registered hazardous waste hauler to transport the waste for treatment and disposal. There are a number of haulers used by businesses in the county. Currently, the primary haulers of hazardous wastes generated in the County are EMD and five companies registered by DTSC (DTSC 2002).

The County currently contracts with MES Environmental and Philip Transportation and Remediation, Inc., to transport hazardous wastes generated by households (Morgan, pers. comm., 2002). Registered hazardous waste haulers may use all county roadways to transport hazardous materials. Haulers transport the hazardous waste to a variety of destinations outside the county.

According to EPA's Envirofacts database, there are currently nine registered transporters of hazardous wastes (EPA 2003). DTSC lists five currently active hazardous waste transporters that are based in El Dorado County (DTSC 2003a). The quantity of commercial hazardous waste hauled for legal disposal is tracked by DTSC via the cradle-to-grave system, which uses a multicopy hazardous waste manifest as documentation. This information from DTSC's Hazardous Waste Tracking System may be obtained from EMD.

Accidental Release

Accidental release is one of the primary ways through which exposure to hazardous materials can occur. During the 1-year period between July 1, 2001, and June 30, 2002, there were 32 hazardous material-related incidents that were responded to by the County. Confirmed releases of hazardous materials occurred in 27 of the 32 incidents. Released hazardous materials included antifreeze, gasoline, chlorine, diesel, latex paint, propane, motor oil, and various chemicals. According to EMD, this is typical of the type and frequency of responses in recent years (Jukes, pers. comm., 2002). All accidental release of hazardous materials are responded to and remediated to the extent possible. Often, hazardous materials disperse into surface water or air before they can be contained and properly disposed of. Occasionally, people are exposed to hazardous materials during accidental release incidents. The health effects of exposure vary depending on the concentration, route of entry into the body, and length of exposure to the hazardous materials, as well as the person's age and pre-existing health status. Occasionally, the received doses are high enough to warrant medical treatment (Johnston 2003).

Illegal Disposal

Illegal disposal, which is the disposal of solid and liquid wastes in unpermitted locations (e.g., streambank, backyard, off-road areas, storm drains, septic systems, solid waste stream), is another way that exposure to hazardous materials can occur. Illegal disposal of solid wastes and hazardous wastes is a pervasive problem throughout the United States, and it occurs in El Dorado County. EMD received approximately 200 complaints of illegal disposal of solid waste in 2001 (Opalenick, pers. comm., 2002). While no data are available on incidents of unreported illegal disposal, it is likely that unreported incidents occur more frequently than reported incidents. Household hazardous wastes are often disposed of in the solid waste stream, such as when small quantities of cleaning products, insecticides, and other household chemicals are disposed in the garbage. It should be noted that this includes a range of activities, including the improper disposal of empty containers of common household products containing hazardous substances (e.g., cleansers) and batteries. Furthermore, most incidents of illegally disposed liquid wastes do not leave visible evidence, particularly when hazardous wastes are disposed into storm drains and septic systems, and are unlikely to be reported.

Through the Certified Unified Program business plan inventory program, the County tracks the generation, use, and disposal of hazardous wastes by businesses and industry. Quantities of waste hauled for legal purposes are also available from DTSC's Hazardous Waste Tracking System. The *Final El Dorado County Hazardous Waste Management Plan* (CHWMP) concluded that while the amount of illegally disposed hazardous wastes may be extrapolated based on the discrepancy between the amount generated and the amount disposed, the data would not comprehensively show the amount of hazardous wastes illegally disposed of in the county. While an exact quantification of illegally disposed wastes is not possible based on available data, the CHWMP estimated that in 1986, 20% to 30% of the hazardous waste generated by small businesses and industries in the county were improperly or illegally disposed (EDCCDD and George Wheeldon and Associates 1990). Since 1986, the County has implemented a number of programs to reduce illegal disposal, as discussed above.

There is no feasible method of tracking the use and disposal of household hazardous wastes (Johnston, Delmage, and Halverson, pers. comm., 2003). However, the level of illegal disposal activities can be estimated. As shown in Table 5.8-1, approximately 11% of the county's households participate in the County's hazardous waste collection programs and events. The percentage has generally increased since 1995, suggesting that the County's effort to reduce illegal disposal is having a beneficial effect. Statewide, the participation rate is approximately 10% of households (Halverson, pers. comm., 2003). As such, the effectiveness of the County's programs and events is considered to be average or slightly above average. The participation percentage also suggests that illegal disposal of hazardous materials still occurs in a substantial

number of households. While the remaining households may be using other methods to properly dispose of hazardous wastes (i.e., taking their hazardous wastes directly to landfills that accept them), it is likely that the same level of improper disposal occurs in most of the nonparticipating households. Based on the discrepancy between estimated household hazardous wastes generated by households in the county and the amount collected by the County, an estimated 488 tons of household hazardous wastes were unaccounted for in 2002. There are no methods to track the fate of these wastes, and it is likely a large percentage is stored in people's houses (e.g., paint cans, unused pesticides, etc.). It is likely that some of this may have been improperly disposed in 2002. However, existing data cannot comprehensively show the amount of illegally disposed household hazardous wastes, because the data are distorted by the weight of containers, the amount of hazardous wastes collected from businesses, the amount of hazardous wastes stored in homes and not yet disposed, and the amount of household hazardous wastes properly disposed of by alternative methods. The CHWMP, which was completed before the County implemented many of its programs to reduce illegal disposal, stated that between 70% and 80% of hazardous wastes generated by businesses were properly disposed, and this percentage is expected to have increased since 1986 with the implementation of County programs. On the other hand, the CHWMP cited an ABAG study that showed most household hazardous wastes were improperly disposed. As such, the CHWMP concluded that household hazardous wastes may constitute the highest percentage of improperly or illegally disposed hazardous wastes (EDCCDD and George Wheeldon and Associates 1990).

Hazardous Material Sites

Human occupation of sites that are contaminated by hazardous materials is another way that exposure to hazardous materials can occur. Hazardous materials sites are properties on which concentrations of hazardous materials have been released. Typically, sites suspected to be contaminated by hazardous materials are those on which the handling of hazardous materials have occurred routinely as a part of the operations on the site (i.e., auto repairs, gasoline stations, machine shops) and those with single-walled USTs.

According to EPA's Envirofacts Data Warehouse, currently there are three federal Superfund sites in El Dorado County, which are inactive and abandoned hazardous waste sites that have been reported to EPA. (See Regulatory/Planning Environment below for a discussion of Superfund sites.) None of these contaminated sites are on the Superfund National Priority List (EPA 2003).

DTSC maintains the Site Mitigation and Brownfields Reuse Program Database, also known as the CalSites database, which contains information on properties in the state where hazardous

substances have or may have been released. Currently, no sites within El Dorado County have been classified as a confirmed hazardous material site, also known as a State Superfund site or CalSite. Three sites have been classified as potential hazardous material sites that require future reevaluation before a final classification, and 26 other sites have been reported to DTSC but have been referred to other agencies, such as the Regional Water Quality Control Board (RWQCB), the California Integrated Waste Management Board (CIWMB), or local agencies (DTSC 2003a). DTSC also maintains the Hazardous Waste and Substances Site List database, also known as the Cortese List database, which contains information on hazardous material sites provided by various state and local agencies. Agencies are required by CEQA to use the Cortese List to identify locations of hazardous materials release sites when considering development proposals (DTSC 2002). The County currently does not contain sites that are identified in the Cortese List (DTSC 2003b).

The State Water Resources Control Board (SWRCB) maintains the Leaking Underground Storage Tank Information System (LUSTIS) database, which contains information on registered leaking underground storage tanks (LUSTs) in the state. For 2002, there were 155 registered LUSTs in El Dorado County. Ninety-five of these were on the west slope of the county. These LUSTs include both closed cases and LUSTs that are currently being investigated and remediated (SWRCB 2003). EMD maintains a database of USTs, including LUSTs, through its permitting program.

Regulatory/Planning Environment

Numerous federal, state, and local laws pertain to the regulation of hazardous materials; these laws give various agencies authorities to govern the handling of hazardous materials and wastes, as shown in Table 5.8-2. Pertinent legislation is further described below.

Table 5.8-2
Legislation on Hazardous Materials and Wastes

Legislation	Purpose
Federal	
Federal Hazardous Substances Act of 1960	Requires labeling and banning of certain hazardous household products.
Occupational Safety and Health Act of 1970	Ensures worker and workplace safety from recognized hazards to safety and health, such as exposure to toxic chemicals.
Federal Insecticide, Fungicide and Rodenticide Act of 1972	Regulates pesticide distribution, sale, and use. Requires labeling, licensing of pesticides, and certification of applicators.

Table 5.8-2 Legislation on Hazardous Materials and Wastes	
Legislation	**Purpose**
Hazardous Materials Transportation Act of 1975	Requires driver training, load labeling, container design, and safety specifications regarding hazardous materials.
Toxic Substances Control Act of 1976	Authorizes the reporting, tracking, testing, and control of industrial chemicals.
Resource Conservation and Recovery Act of 1976 (RCRA)	Regulates the generation, transportation, treatment, storage, and disposal of hazardous materials.
Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA)	Authorizes management of inactive hazardous waste sites. Also known as Superfund.
Hazardous and Solid Waste Amendments of 1984	Affirms and extends "cradle-to-grave" system established by the RCRA. Includes restrictions on land disposal and USTs).
Superfund Amendments and Reauthorization Act of 1986	Affirms and broadens CERCLA to include emergency planning and other provisions.
Emergency Planning and Community Right-to-Know Act of 1986	Imposes hazardous materials planning requirements to help protect local communities in the event of accidental release.
State of California	
Hazardous Waste Control Law of 1972	Regulates the generation, transportation, treatment, storage, and disposal of hazardous materials. Predates the RCRA.
Hazardous Substance Account Act of 1981	Provides response authority and funding for accidental releases of hazardous substances and hazardous waste disposal sites.
Underground Storage of Hazardous Substance Act of 1983	Governs design, maintenance, testing, and use of USTs containing hazardous materials. Also known as the Sher Bill.
Toxic Injection Well Control Act of 1985	Prohibits injection into the ground of hazardous wastes that would endanger the use of groundwater designated as drinking water.
California Hazardous Materials Release Response Plans and Inventory Law of 1985 (Business Plan Act)	Requires preparation of Hazardous Materials Business Plans and disclosure of hazardous materials inventories.
California Hazardous Waste Control Act of 1986	Regulates siting of hazardous waste facilities and requires preparation of County Hazardous Waste Management Plans. Also known as the Tanner Act.
Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65)	Prohibits the contamination of drinking water with listed chemicals known to cause cancer or reproductive toxicity.

Table 5.8-2 Legislation on Hazardous Materials and Wastes	
Legislation	**Purpose**
Assembly Bill (AB) 1809 (1986)	Requires program for the safe management of household hazardous wastes.
AB 2185 (1987)	Requires implementation of emergency planning and community-right-to-know programs. Also known as the Waters Bill.
Aboveground Petroleum Storage Act of 1990	Establishes inspection program for ASTs in order to avoid spills.
Medical Waste Management Act of 1991	Provides for program to ensure the proper handling and disposal of medical waste.
AB 2707 (1991)	Requires preparation of Household Hazardous Waste Element.
Senate Bill (SB) 1082 (1993)	Established authority to form Certified Unified Program Agencies (CUPAs) for consolidating the hazardous materials management functions of state agencies.
El Dorado County	
Hazardous Materials Ordinance of 1990	Regulates the handling, storage, use, transport, processing, or disposal of hazardous materials. Requires disclosure of accidental release of hazardous materials.
Underground Storage Tank Ordinance of 1994	Requires permits for use of USTs and enforces state standards and requirements for USTs.
Source: EDCCDD and George Wheeldon and Associates 1990.	

Regulatory Setting

Federal Regulations

Federal Hazardous Substances Act of 1960

The Federal Hazardous Substances Act requires that certain hazardous household products bear cautionary labeling to alert consumers to the potential hazards that those products present and to inform them of the measures they need to protect themselves from those hazards. The act gives the EPA authority to ban by regulation a hazardous substance if it determines that the product is so hazardous that the cautionary labeling required by the act is inadequate to protect the public (CPSC 2003).

Federal Insecticide, Fungicide and Rodenticide Act of 1972

The Federal Insecticide, Fungicide and Rodenticide Act provides federal control of pesticide distribution, sale, and use. Pesticide users also must take exams for certification as applicators of pesticides. All pesticides used in the United States must be registered (licensed) by EPA. Registration assures that pesticides will be properly labeled.

Hazardous Materials Transportation Act of 1975

The Hazardous Materials Transportation Act, as amended, is the basic statute regulating hazardous materials transportation in the United States. The purpose of the law is to provide adequate protection against the risks to life and property inherent in transporting hazardous materials in interstate commerce. This law gives the U.S. Department of Transportation (USDOT) and other agencies the authority to issue and enforce rules and regulations governing the safe transportation of hazardous materials (DOE 2002). Specific requirements include packaging standards and hazard communication consisting of documentation and identification of packaging and vehicles. Requirements have also been established for the transport of hazardous materials. State agencies are authorized to designate highways for the transport of hazardous materials. In areas where highways have been so designated, hazardous materials can only be transported on the designated highways and on roadways that represent the shortest distance between the delivery site and the designated highway. Where highways have not been designated, hazardous materials must be transported on routes that do not go through or near heavily populated areas, places where crowds are assembled, tunnels, narrow streets, or alleys, except where there is no practicable alternative route or where the route is necessary to reach delivery sites, designated rest areas, and repair facilities (Code of Federal Regulations Title 49).

In California, the California Highway Patrol is authorized to designate and enforce route restrictions for the transportation of hazardous materials; highways have been designated for three types of hazardous materials. In El Dorado County, U.S. Highway 50 (U.S. 50), State Route (SR) 49, and SR 89 are the designated highways for the transport of hazardous materials classified as explosives. None of the highways in the county has been designated for the transport of inhalation hazard and radioactive hazardous materials. Highways have not been designated for other types of hazardous materials, such as compressed gases, flammable and combustible liquids, flammable solids, oxidizers, and corrosives, which may typically be transported on any state highway and other roadways within the county, subject to the limitations described above (California Code of Regulations [CCR] Title 13).

Resource Conservation and Recovery Act of 1976

RCRA, as updated in 1984 by the Hazardous and Solid Waste Amendments, deals with both hazardous and nonhazardous solid waste. Subtitle C of RCRA establishes a regulatory framework and approach for managing hazardous waste from generation until ultimate disposal ("cradle to grave"). The two main components of this approach are permitting and tracking. EPA or the states must issue a permit to facilities before they can treat, store, and dispose of hazardous waste. A permit outlines the precautions that must be taken to manage the waste in a manner that adequately protects human health and the environment. Tracking requires each facility handling waste to obtain an identification number. Generators must prepare a uniform manifest document to accompany any transported hazardous waste from the point of generation to the point of final disposal (EPA 1997).

According to RCRA, generators are separated into three groups:

- LQGs are those that generate more than 2,200 pounds (1,000 kilograms) per calendar month (approximately five full 55-gallon drums). Examples of LQGs include pharmaceutical companies and chemical manufacturers.
- SQGs are those that generate between 220 pounds (100 kilograms) and 2,200 pounds (1,000 kilograms) of hazardous waste per calendar month. Examples of SQGs include laboratories, printers, and dry cleaners.
- CESQGs are those that generate less than 220 pounds (100 kilograms) of hazardous waste per calendar month. Examples of CESQGs include 1-hour photo labs and dental offices.

The most stringent requirements are placed on LQGs. Because CESQGs produce a small amount of hazardous waste and because full regulation would present an economic burden on businesses, CESQGs are subject to very minimal requirements. About 98% of the nation's hazardous waste is treated or disposed of onsite by generators (EPA 1997).

RCRA regulations and permits set forth certain procedures that are designed to protect the environment and surrounding communities when owners and operators of hazardous waste facilities close their sites. In addition, RCRA sets standards for groundwater monitoring, disposal unit maintenance, and security measures that some owners and operators of hazardous waste facilities will need to follow for up to 30 years after the facility closes (known as postclosure care) (EPA 1997).

RCRA also regulates USTs that store petroleum or certain chemical products under Subtitle I and medical wastes under Subtitle J. EPA promulgated final regulations in 1988 with respect to UST construction and monitoring methods. The federal regulations set standards for new UST system design, construction, installation and notification, upgrading of existing UST systems, general operating requirements, release detection, reporting and investigation, corrective action and out-of-service and closed UST systems. Additionally, the EPA regulations impose financial responsibility requirements on owners or operators of USTs containing petroleum (Cal-EPA 2002a).

Comprehensive Environmental Response, Compensation and Liability Act of 1980

CERCLA, as amended by the Superfund Amendments and Reauthorization Act of 1986, deals with cleaning up inactive and abandoned hazardous waste sites, which are also known as Superfund sites. This law created a tax on the chemical and petroleum industries and provided broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment (EPA 2002a).

Title III of the Superfund Amendments and Reauthorization Act, also known as the Emergency Planning and Community Right-to-Know Act, imposes hazardous materials planning requirements to help protect local communities in the event of accidental release. To implement this act, Congress required each state to appoint a State Emergency Response Commission. The commissions were required to divide their states into Emergency Planning Districts and to name a Local Emergency Planning Committee for each district. Broad representation by firefighters, health officials, government and media representatives, community groups, industrial facilities, and emergency managers ensures that all necessary elements of the planning process are represented (EPA 2002a).

State Regulations

Hazardous Waste Control Law of 1972

The Hazardous Waste Control Law established the definition of hazardous waste and the management of hazardous wastes in the state. This law is similar to RCRA, which incorporated some of its provisions.

Hazardous Substance Account Act of 1981

The Carpenter-Presley-Tanner Hazardous Substances Act or Hazardous Substance Account Act, also known as the "California Superfund," establishes a program to provide for response

authority and funding for accidental releases of hazardous substances and hazardous waste disposal sites that pose a threat to the public health or the environment.

Underground Storage of Hazardous Substance Act of 1983

The California Underground Storage of Hazardous Substance Act, also known as the Sher Bill, governs the construction, maintenance, testing, and use of USTs for the temporary and long-term storage of hazardous substances. This act establishes design, maintenance, and monitoring standards and procedures for inspection and testing by CUPAs.

Toxic Injection Well Control Act of 1985

The Toxic Injection Well Control Act prohibits any injection of hazardous wastes into the ground that would endanger the use of the particular groundwater that is designated as drinking water.

Business Plan Act (1985)

The California Hazardous Materials Release Response Plans and Inventory Law of 1985, also known as the Business Plan Act, requires preparation of Hazardous Materials Business Plans and disclosure of hazardous materials inventories. A Business Plan includes information such as an inventory of hazardous materials handled, storage location of hazardous materials, an emergency response plan, and provisions for employee training in safety and emergency response procedures. The State Office of Emergency Services (OES) has primary regulatory responsibility, with delegation of authority to local jurisdictions. Local agencies include the various local fire protection districts and the Solid Waste & Hazardous Materials Division of EMD.

Under certain circumstances, a business must prepare a Risk Management and Prevention Plan to minimize offsite risks associated with acutely hazardous materials. This plan provides additional planning information that covers equipment and system safety, operating procedures, preventive maintenance, upset risk assessments, and safety auditing. Statewide, DTSC has primary regulatory responsibility for management of hazardous materials, with delegation of authority to the local agencies mentioned above.

California Hazardous Waste Control Act of 1986

The California Hazardous Waste Control Act, also known as the Tanner Act (AB 2948), requires the preparation of a County Hazardous Waste Management Plan (CHWMP) and the identification of potential areas for the siting of needed future hazardous waste facilities.

Safe Drinking Water and Toxic Enforcement Act of 1986

The Safe Drinking Water and Toxic Enforcement Act, also known as Proposition 65, prohibits the contamination of drinking water with chemicals known to cause cancer or reproductive toxicity. Many hazardous materials are included in this category. This law also requires the publication and annual updates of a list of these chemicals. The California Office of Environmental Health Hazard Assessment last updated the list in June 28, 2002, and more than 600 chemicals have so far been listed (OEHHA 2002).

Assembly Bill 1809 (1986)

AB 1809 addresses hazardous waste generated by households. AB 1809 requires counties to identify a program for the safe management of household hazardous wastes, which should be separated from the solid waste stream. It authorizes cities and counties to approve an increase in solid waste collection fee to offset the cost of establishing, publicizing, and maintaining a household hazardous waste inspection program. AB 1809 also requires the CIWMB to develop a public information program.

Assembly Bill 2185 (1987)

AB 2185, also known as the Waters Bill, incorporated the provisions of Title III of the Superfund Amendments and Reauthorization Act into a state program. This law delegated implementation of emergency planning and community-right-to-know programs to OES, which has in turn authorized local government agencies to implement the program. Local Administering Agencies are required to prepare Area Plans for environmental emergency planning purposes and to identify and maintain resources for disasters and accidental releases. EMD has prepared and updated the El Dorado County Area Plan.

Aboveground Petroleum Storage Act of 1990

The Aboveground Petroleum Storage Act establishes an inspection program for ASTs. In general, the act requires owners or operators of aboveground petroleum storage tanks to file a storage statement and implement measures to prevent spills.

Medical Waste Management Act of 1991

Within the regulatory framework of the Medical Waste Management Act, the Medical Waste Management Program of the California Department of Health Services (DHS) ensures the proper handling and disposal of medical waste throughout California. DHS permits and inspects medical offsite treatment facilities, transfer stations, and medical waste transporters throughout the state. Locally, EMD enforces the provisions of this act (DHS 2002).

Assembly Bill 2707 (1991)

AB 2707 requires cities and counties to prepare Household Hazardous Waste Elements, which would be included in their CHWMPs.

Senate Bill 1082 (1993)

SB 1082 required the establishment of a unified hazardous waste and hazardous materials management program. The result was the California Environmental Protection Agency's (Cal-EPA's) Unified Program, which consolidates, coordinates, and makes consistent the administration, permitting, inspections, enforcement, and fee functions of DTSC, the SWRCB, the RWQCBs, OES, and the State Fire Marshal. The Unified Program is implemented at the local government level by the Certified Unified Program Agency (CUPA) (Cal-EPA 2003).

County Ordinances and Plans

Hazardous Materials Ordinance (1990)

The Hazardous Materials Ordinance (County Code Chapter 8.38) regulates the handling, storage, use, transport, processing, or disposal of hazardous materials. This ordinance requires reporting of the use of hazardous materials. It also requires disclosure of accidental release of hazardous materials, as well as preventive and mitigative efforts for impacts of hazardous materials. The ordinance is enforced locally by trained staff of fire protection districts and the Solid Waste & Hazardous Materials Division of EMD.

Underground Storage Tank Ordinance (1994)

The Underground Storage Tank Ordinance (County Code Chapter 8.40) enforces the California Health and Safety Code standards for USTs. This ordinance requires underground storage permits for the storage of hazardous materials in USTs. A separate permit is required for the construction, modification, closure, and removal of USTs. The permits require

standards that are designed to minimize the leaking or accidental release of hazardous materials. The ordinance is enforced locally by the various fire protection districts and the Solid Waste & Hazardous Materials Division of EMD.

Solid Waste Management Ordinance (1994)

The Solid Waste Management Ordinance (County Code Chapter 8.42) prohibits the disposal, depositing, or otherwise disposing of any hazardous or biomedical waste onto land, into soil, rock, air, or water or at an unauthorized disposal sites, transfer stations, resource recovery facilities, transformation facilities, buy back centers, drop off recycling centers, or any container to be collected and ultimately deposited, unless otherwise approved by the County. Penalties may be assessed on acts of illegal disposal.

County Hazardous Waste Management Plan

The CHWMP was last prepared in 1988 and amended in 1990. It contains a synopsis of the hazardous waste setting in the county, including the estimated amount of hazardous waste generated in 1986 and the projected amount for 2000. The CHWMP also recommends goals, objectives, policies, and programs for hazardous waste management and facility needs and siting. Specific programs recommended by the CHWMP include a Comprehensive Hazardous Materials and Hazardous Waste Inspection and Monitoring Program (CIMP), a Hazardous Materials Release Response Plan and Inventory, hazardous waste inspections, hazardous waste programs for small businesses and for households, and a Hazardous Materials and Hazardous Waste Data Information System. The CHWMP also discussed funding options for the programs (EDCCDD and George Wheeldon and Associates 1990). DHS must approve the CHWMP before the document becomes effective. The CHWMP was last approved and adopted in 1990.

Household Hazardous Waste Element

The County's most recent Household Hazardous Waste Element (HWWE) of the County Integrated Waste Management Plan, which was prepared in 1993, contains objectives for the management of household hazardous wastes, an assessment of the conditions and programs in 1993, and the recommended programs designed to achieve the objectives. The recommended programs include continuation and expansion of the periodic collection program, a waste inspection program, continuation and expansion of the periodic recycling/waste exchange program, a permanent household hazardous waste collection facility, and a waste exchange program at the recommended permanent facility (CH2M Hill 1993).

El Dorado County Multi-Hazard Functional Emergency Operations Plan

The Multi-Hazard Functional Emergency Operations Plan (MHFEOP) provides guidance for the County's response to extraordinary large-scale emergency situations (e.g., natural disasters, technological incidents, natural security emergencies) that require unusual response. The MHFEOP also contains the County's Area Plan for hazardous materials (EDCOES 1994).

El Dorado County Septic Disposal Program

In addition to these programs, the EMD operates a septic waste treatment system at Union Mine landfill. This program provides for the annual disposal and treatment of septic waste generated throughout the County.

Responsible Agencies

A number of federal, state, and local agencies are involved with the management of hazardous materials. These agencies are listed in Table 5.8-3, and key agency functions are discussed below.

Table 5.8-3
Summary of Regulatory Authority over Hazardous Materials

Regulatory Agency	Authority
Federal	
U.S. Environmental Protection Agency	Federal Water Pollution Control Act Clean Air Act Resource Conservation and Recovery Act Federal Emergency Planning and Community Right-to-Know Act Comprehensive Environmental Response, Compensation and Liability Act Superfund Amendments and Reauthorization Act Federal Insecticide, Fungicide and Rodenticide Act
U.S. Department of Transportation	Hazardous Materials Transportation Act
Occupational Safety and Health Administration	Occupational Safety and Health Act
State	
California Department of Toxic Substances Control	Health and Safety Code, CCR Titles 17, 19, and 22

Table 5.8-3 Summary of Regulatory Authority over Hazardous Materials	
Regulatory Agency	**Authority**
California Department of Industrial Relations, Division of Occupational Safety and Health	California Occupational Safety and Health Act
California Department of Transportation (Caltrans)	Hazardous materials transportation
California Public Utilities Commission	Natural gas pipelines; General Order No. 112-D
Office of Emergency Services	Hazardous Materials Release/Response Plans Acutely Hazardous Materials Law
State Fire Marshal	Uniform Fire Code, CCR Title 19 Hazardous liquid pipelines
California Health & Welfare Agency	Safe Drinking Water and Toxic Enforcement Act
California Integrated Waste Management Board	AB 939
State Water Resources Control Board	Porter-Cologne Water Quality Control Act, CCR Title 23
Central Valley Regional Water Quality Control Board	Underground Storage Tanks National Pollutant Discharge Elimination System (NPDES) permit requirements
County/Local	
El Dorado County Environmental Management Department	Hazardous materials disclosure Underground storage tanks Contaminated sites cleanup CCR, Title 22 CEQA implementation
El Dorado County Air Quality Management District	California Clean Air Act, El Dorado County Air Quality Management District regulations
El Dorado County Agricultural Commissioner	Agricultural chemicals regulation
El Dorado Irrigation District	Wastewater treatment
Various fire districts	Hazardous materials disclosure Emergency response
Source: Sacramento County 1989	

Federal Agencies

U.S. Environmental Protection Agency

As mentioned above, various federal agencies are responsible for the regulation of hazardous materials and wastes. The primary agency is EPA, which produces a list of classified hazardous materials, maintains an inventory of hazardous waste handlers, and works closely with businesses and state and local authorities to make sure these wastes are properly treated and disposed of. EPA also conducts risk management studies to ascertain the potential health effects of exposure to these wastes and oversees Superfund and other programs designed for clean up of contaminated waste sites (EPA 2002a).

U.S. Department of Transportation

Another responsible federal agency is USDOT, which regulates the transportation of hazardous materials. USDOT requires that all shipping papers contain a telephone number where emergency assistance and information can be obtained 24 hours a day. This service must be able to provide information about any cargo that is classified by USDOT as a hazardous material. There are several sources in the United States that an emergency response crew leader can contact in the case of a transportation accident (NPGA 2002).

Occupational Safety and Health Administration

The federal Occupational Safety and Health Administration (OSHA) is responsible for ensuring worker safety by setting standards for implementation of training in the workplace, exposure limits, and safety procedures in the handling of hazardous materials.

State Agencies

Several agencies regulate the transportation and use of hazardous materials to minimize potential risks to public health and safety. The primary agencies are discussed below.

California Department of Toxic Substances Control

As a department of Cal-EPA, DTSC has the primary regulatory authority for hazardous materials regulation enforcement, including administering the state and federal Superfund programs for the management and cleanup of hazardous materials. DTSC regulates the handling, transporting, storing, treating, disposing of, and cleaning up of hazardous waste by

individuals and businesses; cleans up existing contamination; and looks for ways to reduce the hazardous waste produced in California (DTSC 2002).

DTSC's Hazardous Waste Management Program regulates hazardous wastes through its permitting, enforcement, and Unified Program activities. This program maintains the EPA authorization to implement the RCRA program in the state; in addition, it develops regulations, policies, guidance, and technical assistance and training to assure the safe storage, treatment, transportation, and disposal of hazardous wastes.

DTSC's State Regulatory Programs Division carries out the state's hazardous waste recycling and resource recovery program, which is designed to facilitate recycling and reuse of hazardous waste. The division conducts a corrective action oversight program to ensure that releases of hazardous constituents at generator facilities that conduct onsite treatment of hazardous waste are remediated safely and effectively. It also oversees the hazardous waste generator and onsite waste treatment surveillance and enforcement program carried out by local CUPAs (DTSC 2002).

California Department of Transportation

Caltrans enforces regulations for hazardous materials transport. Specifically, Caltrans determines the container types used by licensed hazardous materials haulers for hazardous materials transportation on public roads.

California Highway Patrol

The California Highway Patrol collaborates with Caltrans in enforcing regulations for hazardous materials transport and determining container types used for hazardous materials transportation on public roads.

Office of Emergency Services

OES administers the state's Emergency Plan for coordinating emergency services provided by federal, state, and local government and private agencies. Response to hazardous materials incidents is one part of this plan. Within El Dorado County, OES coordinates the responses of other state agencies, including Cal-EPA, the California Highway Patrol, the California Department of Fish and Game (CDFG), and the RWQCB, as well as County agencies and the various local fire protection districts.

Regional Water Quality Control Board

Individual RWQCBs are the lead agencies responsible for identifying, monitoring, and cleaning up leaking USTs. Storage of hazardous materials in USTs is regulated by the SWRCB, which oversees the RWQCBs. State regulations include standards pertaining to the installation and monitoring of new USTs, monitoring of existing USTs, and corrective actions for removed USTs. Implementation of state UST regulations, including permitting, is enforced locally. In El Dorado County, the enforcing agency is EMD. This enforcement is discussed below.

The California Accidental Release Prevention Program is a merging of the federal and state programs for the prevention of accidental release of regulated toxic and flammable substances. Pursuant to the California Health and Safety Code, OES was required to adopt implementing regulations and to seek and maintain delegation of the federal program. The goal is to eliminate the need for two separate and distinct chemical risk management programs (EDCOES 2002).

Local Agencies

El Dorado County Environmental Management Department

The County's Hazardous Materials Program is managed by the Solid Waste & Hazardous Materials Division of EMD, which serves as the County's CUPA. The Solid Waste & Hazardous Materials Division is responsible for management of and education programs on hazardous waste generated by households and businesses. It also inspects businesses that handle hazardous materials, responds to hazardous material spills and releases, and conducts special collection events for household hazardous waste, universal wastes, and tires (EMD 2002a). EMD regulates the cleanup of contaminated properties in its jurisdiction in coordination with Cal-EPA.

El Dorado County Sheriff Office of Emergency Services

The County's Office of Emergency Services, which is managed by the County Sheriff's Office, collaborates with the county's fire districts, emergency medical services agency, hospitals, schools, and public and private agencies to implement preparedness programs, develop emergency response plans, and conduct training drills. The Office of Emergency Services also sponsors several community based programs, such as the "Neighborhood Emergency Services Team," which provides important information regarding the things citizens can do individually and collectively to prevent, respond to, and survive a disaster event, such as a

hazardous material spill. If a disaster should occur, the Office of Emergency Services would activate and deploy emergency personnel and resources in order to minimize the effect of the disaster and to assist in recovery efforts (EDCOES 2003).

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Thresholds of Significance

Adoption of the General Plan would have a significant impact if development would:

- create a significant hazard to the public or the environment associated with the routine transport, use, or disposal of hazardous materials;
- create a significant hazard to the public or the environment through a reasonably foreseeable accidental release of hazardous materials into the environment;
- result in hazardous emissions or handling of hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
- occur on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, would create a significant hazard to the public or the environment; or
- impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

Hazardous emissions, also known as toxic air pollutants or air toxics, are addressed in Section 5.11, Air Quality, of this EIR.

Impact **5.8-I**

Increased Risk of Exposure Resulting from Routine Use of Hazardous Materials. The increase in development in the county under all alternatives would increase the handling of hazardous materials, particularly at commercial and industrial developments that may occur on land designated Industrial, Commercial, and Research and Development. Handlers of hazardous materials would be required to be in compliance with existing laws, regulations, and programs. This impact is considered **less than significant** for all alternatives. Impact significance is shown in the table below.

Impact	Significance Before Mitigation*							
	Alt. #1 (No Project)		Alt. #2 (Roadway Constrained 6-Lane "Plus")		Alt. #3 (Environmentally Constrained)		Alt. #4 (1996 General Plan)	
	2025	Buildout	2025	Buildout	2025	Buildout	2025	Buildout
5.8-1: Increased Risk of Exposure Resulting from Routine Use of Hazardous Materials	LS	LS	LS	LS	LS	LS	LS	LS
Mitigation	**Significance After Mitigation***							
	Alt. #1 (No Project)		Alt. #2 (Roadway Constrained 6-Lane "Plus")		Alt. #3 (Environmentally Constrained)		Alt. #4 (1996 General Plan)	
	2025	Buildout	2025	Buildout	2025	Buildout	2025	Buildout
N/A	LS	LS	LS	LS	LS	LS	LS	LS

* Notes: LS = Less than Significant; N/A= Not Applicable; S = Significant; SU = Significant and Unavoidable. Significant impacts are ranked against each other by alternative for the 2025 scenario and the buildout scenario, from 1 (Worst Impact) to 4 (Least Impact). Where the impact under two different alternatives during the same time frame would be roughly equal in severity, the numerical ranking is the same.

Environmental Impacts Common to All Equal-Weight Alternatives

The increase in population and job growth would increase the routine use of hazardous materials in the county. Because businesses and industry account for most of the hazardous waste generated in the county, most of the increase in hazardous material use is attributed to new commercial and industrial development, represented by job growth as shown in Table 4-5.

The County's Hazardous Waste Management Plan, originally prepared in 1988, was last updated in 1990. Compliance with the CHWMP would ensure that existing procedures for the handling of hazardous materials would be in compliance with laws and regulations existing at the time of the last update. A number of recommended activities for new programs and pre-existing programs were included in Section 8 of the CHWMP. Some of these activities are as follows:

< Complete inspections and permitting efforts and develop a data inventory for the Underground Tank Program.

< Develop efforts on identification, coordination, cleanup, notification, and monitoring of contaminated sites.

- Develop financing and data inventory efforts for water quality in compliance with Proposition 65.
- Explore forming agreements with generators of infectious wastes to incinerate or transport to offsite locations for disposal.
- Conduct drills and help businesses develop emergency response plans.
- Coordinate and integrate data inventory with other agencies.
- Incorporate air quality management activities into the Comprehensive Hazardous Materials and Hazardous Waste Inspection and Monitoring Program.
- Monitor nonrestricted pesticide use and promote recycling and reducing the use of pesticides.
- Develop an inspection and monitoring program (e.g., CIMP).
- Develop a hazardous waste program for small businesses.
- Develop a hazardous waste program for households.
- Develop a data information system (e.g., Hazardous Materials and Hazardous Waste Data Information System).

As a part of the Certified Unified Program Agency (CUPA) certification process, EMD has implemented these recommended activities (Morgan, pers. comm., 2003). EMD has also implemented activities required by new laws and regulations that have been adopted since the last update of the CHWMP. These new laws and regulations include the Medical Waste Management Act of 1991, AB 2707 (1991), SB 1082 (1993), the Hazardous Materials Ordinance of 1990, and the Underground Storage Tank Ordinance of 1994 (please refer to Table 5.8-2). In compliance with these laws and regulations, EMD's Solid Waste & Hazardous Materials Division has assumed responsibility as the County's CUPA, and EMD has implemented a medical waste management program that includes permitting and tracking. In addition, the County prepared a Household Hazardous Waste Element in 1993 as described above in County ordinances and plans. EMD has also instituted a number of programs to comply with the County's Hazardous Materials Ordinance. Specifically, for monitoring wells, EMD has implemented an application process for site investigation, installation of soil borings, requirements for installation or abandonment of monitoring wells, and remediation efforts. EMD also acts as the primary response agency for hazardous material accidental release incidents.

California Public Resources Code §21151.4 requires new facilities that would handle acutely hazardous material or a mixture containing acutely hazardous material in a quantity equal to or greater than the quantity specified in §25536 of the Health and Safety Code, to consult with school districts before the approval of CEQA documentation, if such facilities would be located within one-quarter mile of schools. It is expected that school districts and the County Air Quality Management District would require such facilities to comply with these regulations to minimize any potential risks posed to schools.

No Project Alternative (Alternative #1)

Relevant Goals/Policies—No Project Alternative

The relevant policies included in the 1996 General Plan that are applicable to the No Project Alternative are Policies 6.6.1.1, 6.6.1.3, and 6.7.6.1.

No Project Alternative (2025)—Impact Discussion

Under this alternative, residential and nonresidential land uses would increase, and the routine handling of hazardous materials (e.g., generation, use, storage, transportation, and disposal of hazardous materials) would increase correspondingly through 2025. The 1996 General Plan land use map, which would be applicable to this alternative, includes more acres of land designated Industrial, Commercial, and Research and Development than the land use map for the Roadway Constrained 6-Lane "Plus"and Environmentally Constrained Alternatives. Uses not restricted by the Writ, commercial and industrial developments, would be at similar levels as expected in the other alternatives (36,188 jobs). Of the four alternatives, the No Project Alternative would result in the least population growth and the second lowest increment of job growth. Because businesses and industry account for most of the hazardous waste generated in El Dorado County, this alternative would be expected to result in the second lowest increase in the routine use of hazardous materials.

Policy 6.6.1.1 designates the CHWMP as the implementation program for the management of hazardous waste. As discussed above, the existing procedures for the management of hazardous wastes are considered to be compliant with the CHWMP. Policy 6.6.1.3 requires the County to provide for the disposal of aviation generated hazardous wastes. Policy 6.7.6.1 requires the County to ensure that new facilities in which sensitive receptors are located are sited away from significant sources of air pollution, including airborne hazardous materials (toxic air emissions are discussed in Section 5.11, Air Quality, of this EIR.)

The County's management programs for the routine use of hazardous materials are compliant with the CHWMP and existing laws and regulations. Handlers of hazardous materials must comply with the County's programs, as well as those of other local, state, and federal agencies. Ministerial development would also need to comply with applicable laws and regulations. Therefore, the increased routine of use of hazardous materials would not result in a significant impact.

No Project Alternative (Buildout)—Impact Discussion

Buildout of the No Project Alternative would result in additional residential development, primarily single-family residences on existing parcels in various parts of the County, and additional employment-supporting commercial/industrial development. The routine handling of hazardous materials would increase correspondingly. Of the four alternatives at buildout, the No Project Alternative would result in the lowest residential and the second lowest increase in job growth. An additional 8,086 residences (for a total of 29,520) and development to support 48,172 new jobs would be provided after 2025 for total job growth of 84,360. As discussed above, compliance with the County's programs, as well as those of other local, state, and federal agencies, would ensure that no significant impact would result.

Roadway Constrained 6-Lane "Plus" Alternative (Alternative #2)

Relevant Goals/Policies—Roadway Constrained 6-Lane "Plus" Alternative

The relevant policy that is applicable to the Roadway Constrained 6-Lane "Plus" Alternative is Policies HS-6a, HS-6b, HS-6c, HS-7a and HS-7b.

Roadway Constrained 6-Lane "Plus" Alternative (2025)—Impact Discussion

Under this alternative, residential and nonresidential land uses would increase, and the handling of hazardous materials would increase correspondingly through 2025. In addition to the 14,565 units allowed under existing commitments, this alternative permits residentially-designated legal parcels to be split into up to four new parcels if the land use designation allows additional lots to be created. Each of these new parcels are permitted one dwelling unit. Like the No Project Alternative, development under this alternative would be spread out to various parts of the County. However, the division of the parcels would allow more residential development under the Roadway Constrained 6-Lane "Plus" Alternative than under the No Project Alternative. A total of 11,274 units in addition to existing commitments (25,839 total added units) is projected to be developed by 2025. There would be less nonresidential development under this alternative by 2025 (development to support 34,455 jobs) than the

other alternatives. Overall, the generation and handling of hazardous materials would increase from existing conditions, but the increase would be the smallest of the four alternatives by 2025 because this alternative has the smallest increase in nonresidental development.

Policy HS-6a would require the County to update its CHWMP to reflect regulations and standards adopted since the last CHWMP was prepared. Policies HS-6b and HS-6c require the County to review applications and capital improvement projects to ensure that hazardous materials are handled safely. Policies HS-7a and HS-7b address new development in sites that are known to or may contain hazardous materials.

The County's management programs for the routine use of hazardous materials are compliant with the CHWMP and existing laws and regulations, and handlers of hazardous materials must comply with the County's programs and policies, as well as those of other local, state, and federal agencies; therefore, the this impact is considered less than significant.

Roadway Constrained 6-Lane "Plus" Alternative (Buildout)—Impact Discussion

At buildout, it is assumed that all designated land on the map would be developed. A total of 41,652 units (15,813 more than in 2025) would be developed. Overall, this alternative and the 1996 General Plan Alternative would have the highest amount of acreage for commercial and industrial land use of the four alternatives, with a total 86,688 jobs. Because business and industry account for most of the hazardous waste handled in El Dorado County, this alternative and the 1996 General Plan alternatives would result in the highest increase in the handling of hazardous materials.

Please see Roadway Constrained 6-Lane "Plus" Alternative (2025)—Impact Discussion above. As discussed above, future projects must comply with the County's programs, as well as those of other local, state, and federal agencies; therefore, this impact is considered less than significant.

Environmentally Constrained Alternative (Alternative #3)

Relevant Goals/Policies—Environmentally Constrained Alternative

For the relevant policies of the Environmentally Constrained Alternative, please refer to the policies listed above under Relevant Goals/Policies—Roadway Constrained 6-Lane "Plus" Alternative.

Environmentally Constrained Alternative (2025)—Impact Discussion

Residential subdivisions are permitted, resulting in higher density residential development under the Environmentally Constrained Alternative than under the No Project and Roadway Constrained 6-Lane "Plus" Alternatives. By comparison, Community Regions and Rural Centers would be reduced in size and the amount of acreage devoted to commercially designated land would be reduced. Overall, there would be more residences (32,290 new units) under this alternative than the No Project and Roadway Constrained 6-Lane "Plus" Alternatives. This alternative would also have highest amount of employment-generating nonresidential development of the four alternatives (42,711 jobs). The differences in population growth and job growth between the 1996 General Plan Alternative and the Environmentally Constrained Alternative are small enough that the increases in the use and handling of hazardous materials would be expected to be similar under these two alternatives by 2025. Thus the highest generation and handling of hazardous materials would be expected under the 1996 General Plan and the Environmentally Constrained alternatives by 2025.

Please see Roadway Constrained 6-Lane "Plus" Alternative (2025)—Impact Discussion above. As discussed, compliance is required with the County's programs, as well as those of other local, state, and federal agencies. This impact is considered less than significant.

Environmentally Constrained Alternative (Buildout)—Impact Discussion

This alternative contains the least acreage designated for commercial and industrial development at buildout of all alternatives, supporting 67,709 jobs. As such, the generation and use of hazardous materials would also be the lowest under this alternative at buildout. However, because of the more compact land use development pattern, many of the commercial developments would consist of mixed uses, and more residents would live in closer proximity to businesses that use hazardous materials, such as dry cleaners, medical offices, and auto repairs than under the other alternatives. Please refer to Section 5.1 for discussion of land use compatibility. After with the 1996 General Plan Alternative, residential growth would be the highest under this alternative (55,078 units at buildout; 22,788 constructed after 2025); thus, the use of household hazardous wastes would be the greatest under these two alternatives. Because compliance is required with the County's programs, as well as those of other local, state, and federal agencies, this impact is considered less than significant.

1996 General Plan Alternative (Alternative #4)

Relevant Goals/Policies—1996 General Plan Alternative

For the relevant policies of the 1996 General Plan Alternative, please refer to the policies listed above under Relevant Goals/Policies—No Project Alternative.

1996 General Plan Alternative (2025)—Impact Discussion

The 1996 General Plan Alternative would result in more residential development by 2025 than the No Project and Roadway Constrained 6-Lane "Plus" Alternatives and a similar level of residential development as the Environmentally Constrained Alternative (32,491 units). The greatest amount of household hazardous wastes would be used under this alternative. Commercial and industrial development would be the highest under the 1996 General Plan (42,196 jobs) and the Environmentally Constrained Alternatives; thus these two alternatives have the greatest potential for the use of hazardous materials. Overall, the amount of hazardous materials handled would be greatest under the 1996 General Plan Alternative and Environmentally Constrained Alternative, followed by the No Project Alternative, and then the Roadway Constrained 6-Lane "Plus" Alternative.

Applicable policies would be the same as the No Project Alternative. As discussed above, compliance with the County's programs, as well as those of other local, state, and federal agencies is required. This impact is considered less than significant.

1996 General Plan Alternative (Buildout)—Impact Discussion

The 1996 General Plan Alternative would result in more residential development by buildout than all alternatives, with a total of 78,692 units (46,201 units after 2025). The greatest amount of household hazardous wastes would be used under this alternative. Employment growth would be the highest under the 1996 General Plan and the Roadway Constrained 6-Lane "Plus" Alternatives (86,688 jobs under both alternatives); thus these two alternatives have the greatest potential for the use of hazardous materials. Overall, the amount of hazardous materials handled would be greatest under the 1996 General Plan Alternative and Roadway Constrained 6-Lane "Plus" Alternative, followed by the No Project Alternative, and then the Environmentally Constrained Alternative.

As discussed above, compliance with the County's programs, as well as those of other local, state, and federal agencies is required. This impact is considered less than significant.

Impact **5.8-2**

Increased Incidents of Illegal Disposal of Household Hazardous Wastes. New residential development would increase the use and disposal of household hazardous materials in the county, and the potential for an increase in the occurrence of illegal disposal of household hazardous wastes would increase correspondingly. While the General Plan Alternatives include policies to reduce the potential for this activity, they cannot control illegal human behavior. Thus, illegal disposal cannot be eliminated or be shown to be substantially reduced; therefore, this impact is considered **significant**. Because this impact is directly linked to the number of households in the county, the severity of this impact would be greatest under the 1996 General Plan Alternative, followed by the Environmentally Constrained Alternative, Roadway Constrained 6-Lane "Plus" Alternative, and then the No Project Alternative. Impact significance before and after mitigation is shown in the table below.

Impact	Significance Before Mitigation*							
	Alt. #1 (No Project)		Alt. #2 (Roadway Constrained 6-Lane "Plus")		Alt. #3 (Environmentally Constrained)		Alt. #4 (1996 General Plan)	
	2025	Buildout	2025	Buildout	2025	Buildout	2025	Buildout
5.8-2: Increased Incidents of Illegal Disposal of Household Hazardous Wastes	S_4	S_4	S_3	S_3	S_2	S_2	S_1	S_1
Mitigation	**Significance After Mitigation***							
	Alt. #1 (No Project)		Alt. #2 (Roadway Constrained 6-Lane "Plus")		Alt. #3 (Environmentally Constrained)		Alt. #4 (1996 General Plan)	
	2025	Buildout	2025	Buildout	2025	Buildout	2025	Buildout
None Available	SU_4	SU_4	SU_3	SU_3	SU_2	SU_2	SU_1	SU_1

* Notes: LS = Less than Significant; N/A= Not Applicable; S = Significant; SU = Significant and Unavoidable. Significant impacts are ranked against each other by alternative for the 2025 scenario and the buildout scenario, from 1 (Worst Impact) to 4 (Least Impact). Where the impact under two different alternatives during the same time frame would be roughly equal in severity, the numerical ranking is the same.

Environmental Impacts Common to All Equal-Weight Alternatives

Under all alternatives, the residential population would increase, and the generation of household hazardous waste would increase correspondingly. The following analysis is based on the best available information obtained from County documents and agencies, as well as information obtained from EPA. As discussed below, there is little data available to measure the effectiveness of efforts to reduce illegal disposal. Incidents of illegal disposal of household

hazardous waste may also increase proportionately with population increases. As discussed above, the amount of illegally disposed household hazardous waste cannot be quantified because of the lack of existing data and lack of a mechanism to collect data (Johnston, pers. comm. 2003). However, the illegal disposal of hazardous wastes is known to occur in the county. As previously described, approximately 200 solid waste complaints were received by the County in 2001 (Opalenick, pers. comm., 2002). In 2002, the County Sheriff's Office received 190 reports of illegal disposal incidents involving solid wastes, liquid wastes, and hazardous wastes (Egbert, pers. comm., 2003). According to EPA, the average household generates 20 pounds of household hazardous waste per year (EPA 2003). Thus, in a worst-case scenario, some households could illegally dispose up to 20 pounds of household hazardous waste into septic systems, sewer systems, storm drains, the solid waste stream, and at other unauthorized disposal locations in the county. If the incidence of illegal disposal increases at a rate proportionate with population growth, which is a reasonable assumption, the amount of illegally disposed household hazardous waste would increase substantially under each alternative.

Illegal disposal is by definition prohibited by law. It occurs because some residents may not know that such disposal is illegal, or they may not wish to be inconvenienced by having to take extra steps to properly dispose of such waste. Whereas there is a systematic and regular service for disposal of regular solid waste in the county (see Section 5.6, Utilities), proper disposal of household hazardous waste requires knowledge that a product may be household hazardous waste, and an effort made in disposing of the household hazardous waste at one of several acceptable facilities in the county. The County's Solid Waste Management Ordinance allows the imposition of fines or imprisonment upon persons found guilty of illegal disposal. Enforcement of this ordinance is hindered, however, by the lack of useful evidence of violations in most cases and by the infeasibility of devoting enough financial and human resources toward maximum enforcement. As such, it cannot be expected that imposition of additional regulations, standards, or policies to diminish illegal disposal will be effective.

Programs that encourage or provide incentives for the proper disposal of household hazardous waste may reduce overall illegal disposal. Because the extent of the problem and the effectiveness of existing management strategies cannot be ascertained by numerical means (Johnston, pers. comm., 2002), implementation of all methods available for reducing illegal disposal is expected to be the most effective way to minimize illegal disposal. An integrated strategy to reduce illegal disposal has been recommended by EPA. The four components of the integrated strategy are site maintenance and control (e.g., cleanup efforts), community outreach and involvement, targeted enforcement, and tracking and evaluation (EPA 1998).

The County currently implements this recommended strategy. It provides information on EMD's website regarding proper disposal of common household hazardous wastes, sponsors collection events, and operates permanent and temporary collection facilities throughout the county that make proper disposal more convenient. The County also distributes information on the proper disposal methods of household hazardous waste. The County responds to and investigates complaints of illegal disposal of solid wastes and hazardous wastes, and it operates a Roadside Litter Abatement Program to target litter problem areas that often attract additional illegal disposal. The County's programs and activities that directly or indirectly reduce illegal disposal of household hazardous waste include the following (Johnston, pers. comm., 2003):

- Underground Storage Tank (UST) Program
- Aboveground Storage Tank (AST) Program
- Hazardous Material Incident Response Team
- Free collection and recycling program for used oil and household hazardous waste
- Litter Abatement Program
- Public education programs
- Clean Boating Program
- Load checking for household hazardous waste at MRFs

The recommended management strategy in the 1996 General Plan for minimizing illegal disposal was to continue implementing education, technical assistance, inspection, and monitoring programs and to establish new collection centers. Since 1996, these programs have been implemented to the extent possible, as described above. In addition, the County has implemented other programs, such as providing collection events and permanent collection facilities that provide free collection services for residents as an incentive for proper disposal of household hazardous waste.

Because the programs both educate the public and make proper disposal more convenient, it is likely that the rate of illegal household hazardous waste disposal has been reduced. However, there currently is no feasible tracking and evaluation method available to determine the effectiveness of programs in reducing illegal disposal. Effectiveness can be measured indirectly by the number of illegal disposal complaints received by EMD and other County agencies. However, the calls do not distinguish between solid wastes, household hazardous wastes, and other types of hazardous wastes. Furthermore, as residents become more educated about the proper disposal method of household hazardous wastes, they become more likely to place calls complaining about illegal disposal. This would increase the number of complaints even if there is a lower amount of illegally disposed household hazardous waste. The surveys conducted by the County's Clean Boating Program provides an indirect way of

tracking effectiveness of education programs. Over the 5-year period during which surveys of boaters were taken, there was a positive response regarding boat and bilge oil maintenance practices (Johnston, pers. comm., 2003). The surveys do not reveal the amount of oil illegally disposed; however, it is not expected that the public education campaign has eliminated illegal disposal.

Because illegal disposal of household hazardous waste cannot be prevented even with the implementation of all known methods commonly practiced to minimize illegal disposal, including those recommended by the EPA, this impact would be significant for all alternatives.

No Project Alternative (Alternative #1)

Relevant Goals/Policies—No Project Alternative

The relevant policies included in the 1996 General Plan that are applicable to the No Project Alternative are Policies 6.6.1.1 and 6.6.1.3.

No Project Alternative (2025)—Impact Discussion

Policy 6.6.1.1 provides that a Hazardous Waste Management Plan would serve as an implementation plan for management of hazardous waste and Policy 6.6.1.3 provides for proper disposal of aviation-related hazardous materials. The No Project Alternative would result in the smallest increase in population growth by 2025, and the amount of illegally disposed household hazardous waste would be expected to be commensurately lowest. As mentioned, household hazardous waste may be illegally disposed into sewers, storm drains, the solid waste stream, and septic systems, among other areas. Of these illegal disposal into the storm drain and septic systems may be the most harmful. While wastewater treatment plants (including the Union Mine septic treatment plant) and landfills provide a buffer between people and the environment, household hazardous waste illegally disposed in the septic system could contaminate groundwater in poorly designed septic systems (see Section 5.5), from which well water is drawn; household hazardous waste in a storm drain could flow into surface water bodies, which provide wildlife habitat and may be a source of drinking water. Because it is difficult to trace the source of household hazardous waste that is disposed into the storm drain, population increase, rather than land use patterns, is the best predictor of the amount of household hazardous waste illegally disposed and the No Project Alternative would increase population by 53,610 in 2025 over the 2000 baseline population of 123,080. Because illegal disposal cannot be prevented, this impact is considered significant.

No Project Alternative (Buildout)—Impact Discussion

Please refer to No Project Alternative (2025)—Impact Discussion above. This impact is considered significant. This alternative would result in the smallest population growth (73,829 people over baseline) at buildout; thus it would have the lowest potential incidence of illegal household hazardous waste disposal.

Roadway Constrained 6-Lane "Plus" Alternative (Alternative #2)

Relevant Goals/Policies—Roadway Constrained 6-Lane "Plus" Alternative

The relevant policy that is applicable to the Roadway Constrained 6-Lane "Plus" Alternative is Policy HS-6a and HS-6b.

Roadway Constrained 6-Lane "Plus" Alternative (2025)—Impact Discussion

Under this alternative, population would increase by 64,601 over baseline (the third highest alternative) and the use of household hazardous waste would increase correspondingly through 2025. The third highest potential increase in the amount of illegally disposed household hazardous waste would presumably be expected under this alternative. Because this alternative allows the subdivision of existing parcels into a maximum of four parcels, the amount of development in areas that rely on septic or other onsite wastewater treatment systems would be greater than expected under the No Project Alternative.

Policy HS-6a requires the County to manage wastes in protection of human health and environmental quality. In compliance with this policy, the County has implemented a number of programs to minimize, to the extent possible, the illegal disposal of household hazardous waste. Policy HS-6b requires a hazardous materials management plan with development project using hazardous materials. However, illegally disposed household hazardous waste cannot be prevented and the effectiveness of efforts to reduce illegal disposal cannot be measured in any assured way. Please refer to No Project Alternative (2025)—Impact Discussion above. This impact is considered significant.

Roadway Constrained 6-Lane "Plus" Alternative (Buildout)—Impact Discussion

The third highest amount of residential development and population increase (104,137 over baseline) at buildout would occur under the Roadway Constrained 6-Lane "Plus" Alternative; thus the third highest increase in the amount of illegally disposed household hazardous waste would presumably be expected under this alternative. The amount of household hazardous

waste illegally disposed into storm drains, septic or other onsite wastewater treatment systems, and public sewer systems would also be the third highest. Please refer to Roadway Constrained 6-Lane "Plus" Alternative (2025)—Impact Discussion and to No Project Alternative (2025)—Impact Discussion above. This impact is considered significant.

Environmentally Constrained Alternative (Alternative #3)

Relevant Goals/Policies—Environmentally Constrained Alternative

For the relevant policies of the Environmentally Constrained Alternative, please refer to the policies listed above under Relevant Goals/Policies—Roadway Constrained 6-Lane "Plus" Alternative.

Environmentally Constrained Alternative (2025)—Impact Discussion

While the Environmentally Constrained Alternative concentrates most of the growth into community regions and rural centers, the amount of development allowed by this alternative would be greater than all but the 1996 General Plan Alternative. The amount of development that would rely on septic and other onsite wastewater treatment systems would be greater under this alternative than the No Project and the Roadway Constrained 6-Lane "Plus" Alternatives. Overall, there would be more residential and nonresidential development under the Environmentally Constrained Alternative than under the No Project and Roadway Constrained 6-Lane "Plus" Alternatives, and a slightly less level of residential development would occur under this alternative and the 1996 General Plan Alternative. Thus, the greatest increase in the amount of illegal disposed household hazardous waste, including those disposed into septic systems and storm drains, would be expected under this alternative. Please refer to No Project Alternative (2025)—Impact Discussion above for impact discussion. This impact is considered significant.

Environmentally Constrained Alternative (Buildout)—Impact Discussion

There would be more residential development under the Environmentally Constrained Alternative at County buildout (population increase of 137,688 over baseline) than under the No Project and Roadway Constrained 6-Lane "Plus" Alternatives; but the amount of residential development under this alternative would be less than the 1996 General Plan Alternative. Please refer to Roadway Constrained 6-Lane "Plus" Alternative (2025)—Impact Discussion and the No Project Alternative (2025)—Impact Discussion above. This impact is considered significant. This alternative would result in the second highest impact, because the

overall population, as well as population that rely on septic and other onsite wastewater treatment systems, would be second highest of the four alternatives.

1996 General Plan Alternative (Alternative #4)

Relevant Goals/Policies—1996 General Plan Alternative

For the relevant policies of the 1996 General Plan Alternative, please refer to the policies listed above under Relevant Goals/Policies—No Project Alternative.

1996 General Plan Alternative (2025)—Impact Discussion

The 1996 General Plan Alternative would result in more residential development (population increase of 81,241 over baseline), including those that rely on septic and other onsite wastewater treatment systems, by 2025 than the other projects. Please refer to No Project Alternative (2025)—Impact Discussion above. This impact is considered significant. This alternative would result in the worst impact.

1996 General Plan Alternative (Buildout)—Impact Discussion

The 1996 General Plan Alternative would result in more residential development, including those that rely on septic and other onsite wastewater treatment systems, by buildout (196,692 persons over buildout) than the other three General Plan alternatives, and thus the amount of hazardous materials used would be greater under this alternative than under the other three alternatives. As such, the amount of household hazardous waste release into the environmental through illegal disposal would be expected to be highest under the 1996 General Plan Alternative. (Please refer to 1996 General Plan Alternative (2025) Impact Discussion above.) This impact is considered significant.

Mitigation Measure 5.8-2—No Project Alternative

Mitigation Measure—No Project Alternative

A review of the policies of each alternative and of existing County programs shows that the County is implementing all the state-recommended local programs to reduce the incidence of illegal household hazardous waste disposal. As mentioned previously, EMD currently operates used-oil and household hazardous waste collection programs that include 21 used oil collection centers and three permanent collection centers for household hazardous waste . One-day collection events are held in outlying areas of the county each year. The MRFs conduct load

checking to reduce the presence of hazardous wastes in the solid waste stream. The County Department of Transportation and EMD, in compliance with the RWQCB's water quality standards, implements the stormwater drainage and water quality standards to reduce the presence of hazardous wastes and used oil in stormwater discharges into the receiving water bodies (see Section 5.5, Water Resources). The County Department of Transportation has recently submitted a stormwater management plan to satisfy the NPDES Phase II requirements; proposed programs in the tentative stormwater management plan would expand existing requirements and standards that protect surface-water resources from hazardous wastes carried by stormwater through such features as detention basins and natural filtration systems, as well as public education (e.g., storm drain stenciling). EMD currently operates a litter abatement and solid waste enforcement program that cleans up illegal disposed wastes along roadways. The El Dorado Hills Community Services District, Cameron Park Community Services District, and City of Placerville have proposed to establish a West Slope Litter Abatement and Solid Waste Joint Powers Authority to increase clean-up and abatement activities. Caltrans operates a litter abatement and clean-up program for SR 49, U.S. 50, and SR 193. Aside from the continuation of existing programs that directly and indirectly minimize the illegal disposal of household hazardous waste, no other action would be effective as mitigation measures. Because illegal activities cannot be prevented, no mitigation is available. This impact would remain significant and unavoidable.

Mitigation Measure—Roadway Constrained 6-Lane "Plus" Alternative

Please refer to Mitigation Measure—No Project Alternative above. No mitigation is available.

Mitigation Measure—Environmentally Constrained Alternative

Please refer to Mitigation Measure—No Project Alternative above. No mitigation is available.

Mitigation Measure—1996 General Plan Alternative

Please refer to Mitigation Measure—No Project Alternative above. No mitigation is available.

Impact **5.8-3**

Increased Risk of Accidental Release of Hazardous Materials. The frequency of incidents of accidental releases would increase due to an increase in the number of operations that would handle and transport hazardous materials. While the response and remediation capabilities of the response agencies would be expected to increase so that the risk associated with individual incidents would be contained, the overall number of people that may be exposed to hazardous materials would increase due to the higher frequency of accidental

release incidents and greater number of residents and they are in closer proximity to transportation corridors and businesses. This is expected to be greatest under the 1996 General Plan Alternative because of both the highest employment development and residential development (greater quantities of hazardous materials produced and most people potentially exposed), followed by the Environmental Constrained, the Roadway Constrained 6-Lane "Plus," and with the No Project Alternative having the lowest potential for exposure. This impact is considered **significant** for all of the alternatives. Impact significance before and after mitigation is shown in the table below.

Impact	Significance Before Mitigation*							
	Alt. #1 (No Project)		Alt. #2 (Roadway Constrained 6-Lane "Plus")		Alt. #3 (Environmentally Constrained)		Alt. #4 (1996 General Plan)	
	2025	Buildout	2025	Buildout	2025	Buildout	2025	Buildout
5.8-3: Increased Risk of Accidental Release of Hazardous Materials	S_2	S_2	S_3	S_1	S_1	S_3	S_1	S_1
Mitigation	**Significance After Mitigation***							
	Alt. #1 (No Project)		Alt. #2 (Roadway Constrained 6-Lane "Plus")		Alt. #3 (Environmentally Constrained)		Alt. #4 (1996 General Plan)	
	2025	Buildout	2025	Buildout	2025	Buildout	2025	Buildout
5.8-3, Implement Mitigation Measure 5.10-2(b)	SU_2	SU_2	SU_3	SU_1	SU_1	SU_3	SU_1	SU_1

* Notes: LS = Less than Significant; N/A= Not Applicable; S = Significant; SU = Significant and Unavoidable. Significant impacts are ranked against each other by alternative for the 2025 scenario and the buildout scenario, from 1 (Worst Impact) to 4 (Least Impact). Where the impact under two different alternatives during the same time frame would be roughly equal in severity, the numerical ranking is the same.

Environmental Impacts Common to All Equal-Weight Alternatives

Under all alternatives, residential and nonresidential land uses would increase. As the number of agricultural, commercial, industrial, and governmental operations that handle hazardous materials commensurately increase, the frequency of accidental release incidents, both on the site of the operations and on the routes used during the transport of hazardous materials, would be expected to proportionally increase. While routes currently traveled on during the transportation of hazardous materials would continue to be used through 2025, additional development in the county under this General Plan alternative may require the use of additional routes to reach new development areas. The routes used for the transport of

hazardous materials would generally be the same for all four alternatives, as the location of lands designated Commercial, Industrial, and Research and Development would generally remain the same, and the routes designated by the California Highway Patrol for the transport of certain types of hazardous materials would not differ between the alternatives.

The number of trips transporting hazardous materials would also be expected to increase because of the increased amount of hazardous materials generated by new commercial and industrial development and the potential for traffic accidents, due in part to the overall growth in traffic volume and congestion in the county by 2025, would increase (please see Section 5.4, Traffic and Circulation, of this EIR). There may also be more sensitive receptors, such as those in residential uses, schools, home care facilities, and other buildings along these routes and near the businesses and government operations that handle hazardous materials. Taken as a whole, the frequency of accidental releases would be expected to increase. While the increase in the risk of exposure is most closely tied to the increases in residential population (i.e., number of people who may be exposed) and the amount of traffic on roads (i.e., frequency of traffic accidents involving vehicles carrying hazardous materials), the strongest correlation in potential accidental releases would be with the number of jobs, which generate operations that handle hazardous materials. Please see Table 5.8-4 for the number of jobs for each alternative.

Table 5.8-4
Job Growth on the West Slope

	No Project	Roadway Constrained 6-Lane "Plus"	Environmentally Constrained	1996 General Plan
Increase through 2025	36,188	34,455	42,711	42,196
Increase through buildout [1]	84,360	86,688	67,709	86,688

[1] Buildout numbers are the total increase from the base year and include the number shown for the 2025 projections.

Sources: EPS 2002

During the 1-year period between July 1, 2001, and June 30, 2002, the County responded to 32 hazardous material accidental release incidents. According to EMD, this is typical of the frequency and type of responses in recent years (Jukes, pers. comm., 2002). Of these incidents of accidental release, 15 out of 32 involved vehicular accidents on local roads presumably involving deliveries to local facilities. Four were onsite facility related and the remainder were from unknown sources (including four illegal drug labs). While it is not possible to completely eliminate accidental releases of hazardous materials, it is possible to contain the exposure risk, in terms of the number of people exposed to hazardous materials, associated with each accidental release incident. This may be achieved by increasing the County's response and

remediation capabilities in accordance with the increase in the demand for response and remediation services.

No Project Alternative (Alternative #1)

Relevant Goals/Policies—No Project Alternative

The relevant policy included in the 1996 General Plan that is applicable to the No Project Alternative is Policy 6.1.1.1.

No Project Alternative (2025)—Impact Discussion

Policy 6.1.1.1 requires that the MHFEOP be updated regularly to keep pace with the growing population. Through the MHFEOP and other administrative processes that are responsive to growing populations and new laws and regulations, EMD and other response agencies would be expected to increase their capabilities by adding staffing and equipment or increasing coordination efforts.

Overall, the number of people that may be exposed to hazardous materials would increase due to the higher frequency of accidental release incidents and the larger population in the County that may be exposed to hazardous materials during such incidents. Employment related development (36,188 jobs) and residential development (21,434 units) would be substantially higher than baseline. Because accidental release incidents cannot be prevented, potential increased exposure is a significant impact. Development under this alternative is projected to result in the second lowest number of jobs. This is reflected in the significance ranking.

No Project Alternative (Buildout)—Impact Discussion

Please refer to No Project Alternative (2025)—Impact Discussion above. Both employment-related development (84,360 total new jobs), second lowest, and residential development (29,520 units) would be substantially higher than baseline. This impact is considered significant.

Roadway Constrained 6-Lane "Plus" Alternative (Alternative #2)

Relevant Goals/Policies—Roadway Constrained 6-Lane "Plus" Alternative

The relevant policies that are applicable to the Roadway Constrained 6-Lane "Plus" Alternative are Policies HS-1a and HS-6a.

Roadway Constrained 6-Lane "Plus" Alternative (2025)—Impact Discussion

Policy HS-1a requires that the MHFEOP be updated regularly to keep pace with the growing population. Policy HS-6a would require the management of hazardous materials to maintain human health and safety and environmental quality; this already occurs as a part of EMD's responsibilities as the county's CUPA. Given the existing administrative processes and these policies, the response and remediation capacities of the responsible agencies would be expected to increase. Nonetheless, accidental release incidents would not be eliminated, and people would still be at risk of the exposure to hazardous materials during such incidents. Employment-related development (34,455 jobs) and residential development (25,839 units) would grow substantially over baseline. As such, this impact is considered significant.

Because the number of jobs under this alternative would be the lowest by 2025, the risk would also be lowest under the Roadway Constrained 6-Lane "Plus" Alternative than under the other alternatives.

Roadway Constrained 6-Lane "Plus" Alternative (Buildout)—Impact Discussion

Both employment-related development (86,688 jobs) and residential development (41,652 units) would increase substantially over baseline. Please refer to Roadway Constrained 6-Lane "Plus" Alternative (2025)—Impact Discussion above for policy and impact discussion. This impact is considered significant.

Environmentally Constrained Alternative (Alternative #3)

Relevant Goals/Policies—Environmentally Constrained Alternative

For the relevant policies of the Environmentally Constrained Alternative, please refer to the policies listed above under Relevant Goals/Policies—Roadway Constrained 6-Lane "Plus" Alternative.

Environmentally Constrained Alternative (2025)—Impact Discussion

The increase in residential population, vehicular trips, and the number of operations that handle hazardous materials would increase the frequency of accidental release incidents. Because mixed use developments are required in commercial areas, residences may be located in close proximity to businesses that involve the use of hazardous materials, such as medical offices, dry cleaners, and paint stores. This alternative would also concentrate residential development in community regions and rural centers, where industrial and commercial uses

would also be concentrated. The risk of exposure would increase as the distance decreases between sensitive receptors and the locations at which hazardous materials are stored or used, so risk would be incrementally higher under this alternative. Please refer to Roadway Constrained 6-Lane "Plus" Alternative (2025)—Impact Discussion above. Both employment-related development (42,711 jobs) and residential development (32,290 units) would increase substantially over baseline. The number of jobs forecast is the highest of the alternatives and the risk of exposure from accidental releases is considered the greatest under this alternative. This impact is considered significant.

Environmentally Constrained Alternative (Buildout)—Impact Discussion

Please refer to Roadway Constrained 6-Lane "Plus" Alternative (2025)—Impact Discussion above for policy and impact discussion. Both employment-related development (67,709 jobs) and residential development (55,078 units) would increase substantially over baseline. Under this alternative at buildout, commercial development is significantly lower than the other three alternatives, which results in the least risk of exposure even though uses will be in closer proximity to one another. This impact is considered significant.

1996 General Plan Alternative (Alternative #4)

Relevant Goals/Policies—1996 General Plan Alternative

For the relevant policies of the 1996 General Plan Alternative, please refer to the policies listed above under the No Project Alternative.

1996 General Plan Alternative (2025)—Impact Discussion

The increase in residential population, vehicular trips, and the number of operations that handle hazardous materials would increase the frequency of accidental release incidents. As with the Environmental Constrained Alternative, this alternative would tend to concentrate residential development into community regions and rural centers, where industrial and commercial uses would also be concentrated. Please refer to No Project Alternative (2025)—Impact Discussion above for policy and impact discussion. Both employment-related development (42,196 jobs) and residential development (32,491 units) would increase substantially over baseline. This impact is considered significant.

The number of jobs under this alternative would be essentially the same as for the Environmentally Constrained Alternative. Thus, by 2025, the risk associated with the two alternatives would be higher than the other alternatives.

1996 General Plan Alternative (Buildout)—Impact Discussion

Please refer to No Project Alternative (2025)—Impact Discussion above for policy and impact discussion. Both employment-related development (86,688 jobs) and residential development (78,692 units) would increase substantially over baseline. This impact is considered significant.

Mitigation Measure 5.8-3: Implement Mitigation Measure 5.10-2(b)

Mitigation Measure—No Project Alternative

One of the primary concerns with potential exposure of residents to accidental release of hazardous materials is the proximity of residences to routes used by commercial vehicles transporting hazardous materials. To reduce this concern, the County shall implement Mitigation Measure 5.10-2(b), described in Section 5.10, Noise.

No other feasible mitigation is available. This measure would establish local routes for commercial vehicles, when feasible, and reduce but would not eliminate potential exposure of new residents to accidental releases of hazardous materials, because it is not possible to exclude trucks from proximity to all sensitive land uses. Therefore, this impact would remain significant and unavoidable.

Mitigation Measure—Roadway Constrained 6-Lane "Plus" Alternative

Please refer to the proposed mitigation measure for the No Project Alternative above. With implementation of this mitigation measure, impacts would be reduced, but not to a less-than-significant level.

Mitigation Measure—Environmentally Constrained Alternative

Please refer to the proposed mitigation measure for the No Project Alternative above. With implementation of this mitigation measure, impacts would be reduced, but not to a less-than-significant level.

Mitigation Measure—1996 General Plan Alternative

Please refer to the proposed mitigation measure for the No Project Alternative above. With implementation of this mitigation measure, impacts would be reduced, but not to a less-than-significant level.

Impact **5.8-4**

Increased Risk of Exposure to Hazardous Waste Resulting from New Development on Known, Suspected, and Unknown Contaminated Sites. New development may occur on sites with known or suspected hazardous material contamination and unknown hazardous material contamination. Proposed policies are protective for development on known and suspected contaminated sites. Potential for exposure can occur on sites where contamination is not presently known. This impact is considered **significant** under all alternatives. The severity of this impact would be greatest under the 1996 General Plan Alternative, followed by the Environmentally Constrained Alternative, Roadway Constrained 6-Lane "Plus" Alternative, and lastly by the No Project Alternative. Impact significance before and after mitigation is shown in the table below.

Impact	Significance Before Mitigation*							
	Alt. #1 (No Project)		Alt. #2 (Roadway Constrained 6-Lane "Plus")		Alt. #3 (Environmentally Constrained)		Alt. #4 (1996 General Plan)	
	2025	Buildout	2025	Buildout	2025	Buildout	2025	Buildout
5.8-4: Increased Risk of Exposure to Hazardous Materials Resulting from New Development on Known, Suspected, and Unknown Contaminated Sites	S_4	S_4	S_3	S_3	S_2	S_2	S_1	S_1
Mitigation	**Significance After Mitigation***							
	Alt. #1 (No Project)		Alt. #2 (Roadway Constrained 6-Lane "Plus")		Alt. #3 (Environmentally Constrained)		Alt. #4 (1996 General Plan)	
	2025	Buildout	2025	Buildout	2025	Buildout	2025	Buildout
5.8-4: Remediate Contamination Before Construction of New Development on Suspected Contaminated Sites	LS	LS	LS	LS	LS	LS	LS	LS

* Notes: LS = Less than Significant; N/A= Not Applicable; S = Significant; SU = Significant and Unavoidable. Significant impacts are ranked against each other by alternative for the 2025 scenario and the buildout scenario, from 1 (Worst Impact) to 4 (Least Impact). Where the impact under two different alternatives during the same time frame would be roughly equal in severity, the numerical ranking is the same.

Environmental Impacts Common to All Equal-Weight Alternatives

Development projects on undeveloped sites and redevelopment projects on previously developed sites would occur throughout the county under all alternatives. Some of these developments would occur on sites that are contaminated with hazardous materials.

Many of the contaminated sites in the county have been identified and listed, but there may be other hazardous materials sites that remain unknown to local, state, and federal agencies. Known and suspected contaminated sites would be expected primarily in and near industrial areas, but commercial, agricultural, and residential sites in both urbanized and rural areas all may contain contamination (Johnston, pers. comm., 2003). As such, new residents and workers on new development sites in both developed areas and rural areas may be exposed to hazardous materials on contaminated sites. The more acres of development in the future, the greater the potential for development on contaminated sites.

The county contains a number of listed sites that are known or suspected of containing hazardous material contamination, including three federal Superfund sites, potential hazardous material sites as identified by DTSC (e.g., sites on Cortese list), and sites containing leaking USTs as identified by the SWRCB. These lists are maintained by the Environmental Management Department. These sites were identified through regular inspections or inspections carried out as a result of complaints and accidental release incidents. All commercial sites storing reportable quantities (e.g., 55 gallons, 500 pounds or 200 cubic feet) of hazardous materials or generating hazardous waste are regularly inspected under existing inspection programs administered by EMD. All sites identified through complaints and incidents are also inspected for contamination.

There may also be new development on contaminated sites that are not currently listed. Such sites may include properties previously used for the storage of construction wastes, properties with permitted and unpermitted ASTs and single-walled USTs that were used for the storage of heating fuel or other hazardous materials, and properties on which hazardous materials were generated, used, stored, or treated. Illegal dumping and unreported accidental release incidents may also result in contaminated sites. Furthermore, sites near contaminated properties may also be contaminated as hazardous materials can migrate below ground to adjacent properties. If development occurs on these sites, then the construction workers and occupants would be at risk of exposure to hazardous materials.

No Project Alternative (Alternative #1)

Relevant Goals/Policies—No Project Alternative

The relevant policy included in the 1996 General Plan that is applicable to the No Project Alternative is Policy 6.6.1.2.

No Project Alternative (2025)—Impact Discussion

Policy 6.6.1.2 requires consultation with EMD to identify state-listed contaminated sites prior to the issuance of building permits, which are required for both discretionary and ministerial development. If contamination is confirmed following the site investigation, then remediation would be required before construction may occur. This policy would require both discretionary developments and ministerial developments to check for known onsite contamination by hazardous substances before human occupation of the new development is allowed. As such, the risk of exposure to hazardous materials on known contaminated sites is negligible.

When considering the potential risk of exposure to unknown and unlisted contaminated sites, the level of risk is related to the amount of excavation activities that may expose contamination. The No Project Alternative at 2025 would tend to spread residential development away from Community Regions and Rural Centers, where the potential for contaminated sites (e.g., existing commercial and industrial land uses) is highest. From the perspective of land use pattern, this alternative would result in the lowest risk.

Because development could expose construction workers and future site uses to potential but unknown hazardous waste, this impact is significant.

No Project Alternative (Buildout)—Impact Discussion

Please refer to No Project Alternative (2025)—Impact Discussion for impact and policy discussion. This impact is considered significant.

Roadway Constrained 6-Lane "Plus" Alternative (Alternative #2)

Relevant Goals/Policies—Roadway Constrained 6-Lane "Plus" Alternative

The relevant policies that are applicable to the Roadway Constrained 6-Lane "Plus" Alternative are Policies HS-7a and HS-7b.

Roadway Constrained 6-Lane "Plus" Alternative (2025)—Impact Discussion

The number of development projects in the county would increase from existing conditions under the Roadway Constrained 6-Lane "Plus" Alternative, and there may be development on vacant and pre-developed sites that are contaminated with hazardous materials.

Policy HS-7a would require the County to maintain an updated database of known and suspected hazardous material sites as listed by DTSC. Policy HS-7b requires all applicants for development to consult with the County to determine whether the proposed development site is one of these listed sites. If contamination is confirmed following the site investigation of the listed property, then remediation would be required. The policy would require both discretionary and ministerial development and development that may occur by right to check for onsite contamination by hazardous substances. As such, the risk of exposure to hazardous materials on known contaminated sites is negligible.

Please refer to No Project Alternative (2025)—Impact Discussion above concerning the potential risk of exposure to unknown and unlisted contaminated sites. This impact is considered significant. Under the Roadway Constrained 6-Lane "Plus" Alternative, although subdivisions up to four parcels per legal lot are permitted if the land use description supports it. This could lead to relatively higher density development than, at least, the No Project Alternative. Therefore, greater potential exposure to unknown hazardous waste could occur.

Roadway Constrained 6-Lane "Plus" Alternative (Buildout)—Impact Discussion

Please refer to No Project Alternative (2025)—Impact Discussion and Roadway Constrained 6-Lane "Plus" Alternative (2025)—Impact Discussion above. This impact is considered significant. The higher amount of development would increase the potential risk of exposure to unknown hazardous waste when compared to the No Project Alternative.

Environmentally Constrained Alternative (Alternative #3)

Relevant Goals/Policies—Environmentally Constrained Alternative

For the relevant policies of the Environmentally Constrained Alternative, please refer to the policies listed above under Relevant Goals/Policies—Roadway Constrained 6-Lane "Plus" Alternative.

Environmentally Constrained Alternative (2025)—Impact Discussion

Please refer to Roadway Constrained 6-Lane "Plus" Alternative (2025)—Impact Discussion and No Project Alternative (2025)—Impact Discussion above. This impact is considered significant. This alternative would tend to focus residential development into Community Regions and Rural Centers, where the potential for contaminated sites (e.g., existing commercial and industrial land uses) is generally higher than in areas away from these uses. Because this alternative allows land subdivision, which generally allows development at higher densities, the potential risk of exposure to unknown hazardous waste would incrementally increase.

Environmentally Constrained Alternative (Buildout)—Impact Discussion

Please refer to Roadway Constrained 6-Lane "Plus" Alternative (2025)—Impact Discussion and No Project Alternative (2025)—Impact Discussion above. This impact is considered significant.

1996 General Plan Alternative (Alternative #4)

Relevant Goals/Policies—1996 General Plan Alternative

For the relevant policies of the 1996 General Plan Alternative, please refer to the policies listed above under Relevant Goals/Policies—No Project Alternative.

1996 General Plan Alternative (2025)—Impact Discussion

Please refer to No Project Alternative (2025)—Impact Discussion for impact and policy discussion. This impact is considered significant. The 1996 General Plan Alternative would tend to focus residential development into Community Regions and Rural Centers, where the potential for contaminated sites is highest. Furthermore, it would allow more development in the Community Regions and Rural Centers than all the other alternatives, but would also have more development in rural areas than the Environmentally Constrained Alternative.

1996 General Plan Alternative (Buildout)—Impact Discussion

Please refer to No Project Alternative (2025)—Impact Discussion above. This impact is considered significant. Because this alternative allows subdivisions and they are likely to be extensive throughout the county, based on allowable land use densities, the potential for exposure to unknown hazardous waste is higher under this alternative than under the others.

Mitigation Measure 5.8-4: Remediate Contamination Before Construction of New Development on Suspected Contaminated Sites

Mitigation Measure—No Project Alternative

The following revised policy would reduce this impact to a less-than-significant level:

> **Revised Policy 6.6.1.2:** Prior to the approval of any subdivision of land or issuing of a permit involving ground disturbance, ~~building permit, it shall be determined whether~~ a site investigation, performed by a Registered Environmental Assessor or other persons experienced in identifying potential hazardous wastes, shall be submitted to the County for any ~~the~~ subdivision or parcel that is located on a known or suspected contaminated site included in a list on file with the Environmental Management Department as provided by State of California and federal agencies. If contamination is found to exist by the site investigations, it shall be corrected and remediated in compliance with applicable laws, regulations, and standards prior to the issuance of a new land use entitlement or building permit. ~~If contamination is found to exist, it shall be corrected prior to the issuance of a new land use entitlement or building permit.~~

Prior activities that involved the handling of hazardous materials may include, but are not limited to, illegal disposal of wastes or the use or storage of pesticides, petroleum products, and large quantities of industrial chemicals. The County may require the applicant to provide documentation and information of prior land uses and activities on the proposed development property prepared by a qualified assessor and shall be submitted to the County. With the implementation of this revised policy, known and suspected, and unknown, contamination sites would be expected to be remediated before the commencement of construction activities associated with new development. The risk of exposure to construction workers and occupants would be reduced to less than significant.

Mitigation Measure—Roadway Constrained 6-Lane "Plus" Alternative

The following revised policy would reduce this impact to a less-than-significant level:

> **Revised Policy HS-7b:** Applications for a permit involving ground disturbance for development ~~on sites~~ of property known or suspected to be contaminated by hazardous materials as listed by State and federal agencies and compiled by the El Dorado County Environmental Management Department, shall include a report containing an assessment of the risk to human health and mitigation measures to eliminate any significant threats to human health and mitigation measures to eliminate any significant

health-related threats. Prior to the approval of any subdivision of land or issuing of a permit, as described above, an assessment report may also be required at the discretion of the County based on prior activities that are known or suspected of having occurred on the proposed development property involving the generation, use, storage, treatment, or disposal of hazardous materials. The report shall be prepared by a qualified assessor and shall be submitted to the County. If contamination is found to exist by the assessment report, it shall be corrected and remediated in compliance with applicable laws, regulations, and standards prior to the issuance of a new land use entitlement, building permit, or grading permit.

Prior activities that involved the handling of hazardous materials may include, but are not limited to, illegal disposal of wastes or the use or storage of pesticides, petroleum products, and large quantities of industrial chemicals. The County may require the applicant to provide documentation and information of prior land uses and activities on the proposed development property. With the implementation of this revised policy, known and suspected, and unknown, contamination sites would be expected to be remediated before the commencement of construction activities associated with new development. The risk of exposure to construction workers and occupants would be reduced to less than significant.

Mitigation Measure—Environmentally Constrained Alternative

Please refer to the proposed mitigation measure for the Roadway Constrained 6-Lane "Plus" Alternative above. With implementation of this mitigation measure, impacts would be reduced to a less-than-significant level.

Mitigation Measure—1996 General Plan Alternative

Please refer to the proposed mitigation measure for the No Project Alternative above. With implementation of this mitigation measure, impacts would be reduced to a less-than-significant level.

5.8.2 FLOOD HAZARDS

Flood hazards that may occur in El Dorado County include flooding caused by precipitation, dam failure, and seismic activities. Flooding hazards associated with the increase in development are discussed in this subsection.

A flood has many implications for public safety. Hazards and damage caused by flooding includes loss of life, displacement or complete destruction of buildings, siltation, temporary

loss of utilities, road and bridge damage resulting in transportation slowdowns, loss of goods and services, and the threat of waterborne diseases. Additionally, significant private and public costs are associated with flooding, particularly in urban areas.

In this subsection, the proposed policies and existing regulations are assessed for their effect on reducing impacts related to flooding and seiches. The land use maps for each of the General Plan alternatives are evaluated for the maximum land use density allowed with the 100-year floodplain and dam inundation areas, and the resulting potential for flood hazards area assessed in consideration with the general Plan policies and existing laws, regulations, and programs. The existing conditions, including existing laws, regulations, and programs, are discussed below. The effect of stormwater runoff from new development on offsite locations, including localized flooding, is discussed in Section 5.6, Utilities, of this EIR.

EXISTING CONDITIONS

Physical Environment

Flooding

Flood hazards can result from intense rain, snowmelt, cloudbursts, or a combination of the three, or from failure of a water impoundment structure, such as a dam. Floods from rainstorms generally occur between November and April and are characterized by high peak flows of moderate duration. Snowmelt floods combined with rain have larger volumes and last longer than rain flooding.

Flood-Prone Areas

Because of a lack of extensive low-lying areas and a great deal of upland areas, the majority of El Dorado County is not subject to flooding. The primary flood-prone areas on the west slope of the County are the following:

- South Fork, American River from Kyburz to Riverton and below Chili Bar Dam
- Coloma Canyon Creek between Greenwood and Garden Valley
- Weber Creek from Placerville to the American River, including Cold Springs, Dry Creek, and Spring Creek tributaries
- Shingle Creek from Shingle Springs to the Amador County line
- Deer Creek from Cameron Park to Sacramento County line

- Big Canyon Creek from El Dorado to the Cosumnes River, including the Slate, Little Indian, and French Creek tributaries
- New York Creek
- Middle Fork of the Cosumnes River within the Somerset-Fairplay vicinity, and its confluence with the North Fork of the Cosumnes River
- Cedar Creek from Omo Ranch to the Cosumnes River (FEMA 1996; Maurer, pers. comm., 2003)

Flood Control

Historically, the emphasis for flood management in California has been to control the flow of water. These types of flood control projects have included the construction of reservoirs in upstream areas to retain and gradually release water, the construction of levees to confine water to the channel or designated area, the improvement of channels to increase their water carrying capacity, and the establishment of bypasses or diversions.

There are no dams dedicated to flood control on the west slope or in the Lake Tahoe Basin. All existing reservoirs in El Dorado County are operated for power generation or water storage, not flood control purposes. There is only one known levee in El Dorado County (in El Dorado Hills near Carson Creek). However, this levee is privately owned and it is unknown whether this levee is certified for flood control purposes.

Dam Failure

A dam failure can occur as the result of an earthquake, as an isolated incident because of structural instability, or during heavy runoff that exceeds spillway design capacity. According to the California Department of Water Resources (DWR), El Dorado County does not have a history of major dam failure. Nine dams located within the County have been identified as having the potential of inundating habitable portions of the County in the unlikely event of dam failure. These nine dams are Echo Lake Dam (El Dorado Irrigation District [EID]), Union Valley Dam (Sacramento Municipal Utility District [SMUD]), Ice House Dam (SMUD), Chili Bar Reservoir (Pacific Gas and Electric Company [PG&E]), Stumpy Meadows Dam (Georgetown Divide Public Utility District [GDPUD]), Weber Creek Dam (EID), Slab Creek Dam (SMUD), Loon Lake Auxiliary Dam (SMUD), and Blakely Dam (EID).

In addition to these nine dams, the Caples Lake Dam (EID) and the Cameron Park Lake/Warren Hollister Dam (EID) have been identified by the County as having considerable

potential to inundate inhabited areas in the unlikely event of dam failure. The maps showing the locations and inundation areas of these dams can be found at the County Office of Emergency Services.

Seiche

A seiche is an earthquake-generated wave in an enclosed body of water, such as a lake, reservoir, or bay. A small (0.4-foot) wave surge was reported in Lake Tahoe during the 1966 Truckee earthquake, which had a Richter Scale magnitude of between 6.0 and 6.9.

Regulatory/Planning Environment

Federal Regulations

National Flood Insurance Act (1968)

The National Flood Insurance Act established the National Flood Insurance Program (NFIP), a federal program administered by FEMA. The NFIP enables property owners in participating communities to purchase insurance as protection against flood losses in exchange for state and community floodplain management regulations that reduce future flood damages. Participation in the NFIP is based on an agreement between communities and the federal government.

National Dam Safety Program Act (1972)

The National Dam Safety Program was established in 1972 and is administered by FEMA. The primary purpose of the program is to provide financial assistance to the states for strengthening their dam safety programs.

Dam Safety and Security Act (2002)

The Dam Safety and Security Act was enacted to assist states in improving their dam safety programs, to support increased technical training for state dam safety engineers and technicians, to provide funding for dam safety research, and to maintain the National Inventory of Dams (ASDSO 2003).

State Regulation

Dam Safety Act

The Dam Safety Act was passed to establish procedures for emergency evacuation and control of populated areas below dams. The Dam Safety Act provides for the development of inundation maps by dam owners, map approval by OES, and development of emergency procedures by local governments to evacuate and control the risk areas.

Emergency regulations to implement the Dam Safety Act became effective on April 2, 2002. These regulations require owners of state jurisdictional dams to file inundation maps and studies, and they include provisions for noncompliance that may include referral of the matter to the office of the Attorney General (EDCOES 2002).

County Ordinance and Plan

Flood Damage Prevention Ordinance (1986)

The County has enacted a floodplain ordinance that is compatible with FEMA guidelines in order to regulate development within the 100-year floodplain. This ordinance is applied in conjunction with the County's Zoning Ordinance. Under the Flood Damage Prevention Ordinance, development within the 100-year floodplain may occur; however, certain engineering and zoning standards apply in order to reduce injury and loss of life, to reduce structural damage caused by flooding, and to reduce public expenditures for additional flood control structures. Development within the floodway is also prevented unless no increase in flood elevation would result from the development.

Multi-Hazard Functional Emergency Operations Plan (1993)

The County's Emergency Operations Plan contains dam failure plans for those dams that qualify for mapping. The individual dam facility plans located at the County Department of Emergency Services include a description of the dams, direction of flood waters, responsibilities and actions of individual jurisdictions, and evacuation plans. The Emergency Operations Plan also contains response plans for floods resulting from periods of high rainfall or rapid snowmelt, which can cause flooding in the 100-year floodplain.

Agencies and Organizations

Federal Agencies

Federal Emergency Management Agency

As discussed above, FEMA administers the NFIP. FEMA also prepares the Flood Insurance Rate Maps (FIRMs).

Floodplain Designation and Mapping

The boundary of the 100-year floodplain is the basic planning criterion used to demarcate unacceptable public safety hazards. The 100-year floodplain boundary defines the geographic area having a 1% chance of being flooded in any given year. All streams are subject to areas within the 100-year flow and therefore, have a 100-year floodplain. However, many minor and intermittent streams do not have current FIRMs. Exhibit 5.8-1A and 5.8-1B show the 100-year floodplain areas in the County. Outside these boundaries, the degree of flooding risk is not considered sufficient to justify the imposition of floodplain management regulations. Some level of regulation is desired to protect public health, safety, and welfare within the 100-year floodplain.

The 100-year floodplain is divided into a floodway and floodway fringe. The floodway is the channel of a stream, plus any adjacent floodplain areas, that should be kept free of development so that the 100-year flood can pass through without an obstruction that would result in substantial increase in flood heights. Development within the floodway reduces the channel's floodwater carrying capacity, increases flood heights, and increases flood hazards beyond the border of the floodway. As a minimum standard, FEMA limits any increase in flood heights within the floodway to 1.0 foot or less provided that hazardous water velocities do not result from the increase in flood height.

The area between the floodway and the boundary of the 100-year floodplain is termed the floodway fringe and encompasses the portion of the floodplain that could be used for development without increasing the surface elevation of the 100-year flood more than 1.0 foot at any point.

Different development standards may be formulated for the floodway and the floodway fringe. These standards have two functions. First, they are designed to minimize loss of life and property damage by controlling the types of land uses permitted and by prescribing certain construction methods. Second, they are intended to preserve the ability of the floodway to

discharge the 100-year flood. Failure of floodplain regulations to recognize this latter function by prohibiting encroachment of the floodway would result in an increase in the geographic area of the 100-year floodplain.

National Flood Insurance Program

El Dorado County is a participant in the NFIP, and, as required, the County has implemented an ordinance for 100-year flood protection. The U.S. Army Corps of Engineers (USACE), under contract to FEMA, prepared a flood insurance study report and a series of FIRMs that depict the location of the calculated 100-year flood, flood elevations, floodways, 500-year flood boundaries, and flood insurance rate zones. The most current land use information available at the time of the FIRM preparation, such as land use designation, are typically used to determine the maximum development density potential, which is used to estimate the peak flow and model the flood elevation.

The latest FIRM for El Dorado County was completed in 1995. Exhibit 5.8-1A and 5.8-1B show the 100-year and 500-year flood boundaries. The County participates in the NFIP by reviewing specific development proposals to ensure that structures that may be in a 100-year floodplain are protected from flood damages and that any changes in the floodplain do not cause unacceptable increases in the elevation of the 100-year water surface.

U.S. Army Corps of Engineers

The USACE assists FEMA in providing emergency response for floods. The USACE also inspects and inventories dams throughout the United States in its National Inventory of Dams.

National Inventory of Dams

The National Inventory of Dams currently includes information on approximately 77,000 dams throughout the United States that fit the following criteria:

- High Hazard Potential class dam,
- Medium[1] Hazard Potential class dam,
- Low Hazard Potential class dam that exceeds 25 feet in height and 15 acre-feet (af) storage, and
- Low Hazard Potential class dam that exceeds 50 af storage and 6 feet height.

[1] "Medium" is used in place of the USACE title for this category ("Significant") to avoid confusion with the term as defined in CEQA.

Exhibit 5.8-1A

Exhibit 5.8-1B

The criteria on which hazard potential classifications are based are shown in Table 5.8-5. Currently there are 59 dams in El Dorado County that are listed in the National Inventory of Dams. Of these, nine dams in the County are classified as High Hazard Potential and 35 dams are classified Medium Hazard Potential. This does not suggest dams will fail; only that if they do they could result in inundation hazards. In addition, one dam in Amador County classified as a High Hazard Potential class dam may inundate inhabitants in El Dorado County in the unlikely event of a dam failure.

Table 5.8-5
Dam Hazard Potential Classification

Hazard Potential Classification	Types of Potential Hazard on Downstream Area		Number of Dams in El Dorado County
	Loss of Human Life	Environmental Losses and Disruption of Critical Facilities	
Low	None expected	Low and generally limited to owners' property	15
Medium [1]	None expected	Yes	35
High	Probable; one or more expected	Yes	9

[1] The USACE terms this hazard potential category as "significant." The term "medium" is used here to indicate relative risks and not to suggest that this is a significant impact as used by CEQA.

Source: USACE 2003

State Agency

California Department of Water Resources Division of Dam Safety

The principal goal of the DWR Division of Dam Safety is to avoid dam failure and thus prevent loss of life and destruction of property. Finnon Dam has been identified by the Division of Dam Safety as potentially susceptible to damage from a seismic event because of its hydraulic fill construction method. After the San Fernando Earthquake of 1971, all dams of this construction type were flagged for review and inspection.

Regional Agencies

American River Authority

The American River Authority was established through a Joint Powers Agreement, made and entered into on June 8, 1982, between the County, Placer County, the El Dorado County Water Agency (EDCWA), and Placer County Water Agency. A Board of Directors conducts

the business of the American River Authority. The purpose of the American River Authority Joint Powers Agreement is to study all water development project opportunities on the American River between Placer County Water Agency's Middle Fork American River Project and Folsom Lake. Collectively, the efforts described above comprise what is referred to as the American River Project.

Local Organizations and Agency

El Dorado County Sheriff Office of Emergency Services

The County's Office of Emergency Services, which is managed by the County Sheriff's Office, collaborates with the County's fire districts, emergency medical services agency, hospitals, schools, and public and private agencies to prepare, update, and implement the County's Emergency Operations Plan, which includes emergency response plans for flood and dam failure events. The County Office of Emergency Services also maintains emergency plans for dams that are prepared by utility companies (EDCOES 1994).

El Dorado County Department of Transportation

As a part of the County Department of Transportation's ongoing program to develop a Capital Improvement Program (CIP) for drainage infrastructure, FEMA mapping has been updated for four specific drainages in the County: Deer Creek in Cameron Park, New York Creek in El Dorado Hills, Carson Creek in the El Dorado Hills Business Park, and the El Dorado Townsite. These drainage studies help to identify potential flood-prone areas and may be used to refine FEMA maps during subsequent FIRM updates.

South Fork of the American River Watershed Group

The mission of the South Fork of the American River Watershed Group is to protect and improve the health and condition of the South Fork of the American River watershed through stewardship and education to a measurable extent. With assistance from the County and Georgetown Divide Resource Conservation District, the group will coordinate with federal, state, and local government agencies, neighboring watershed groups, local community organizations, and private individuals to develop a Watershed Management Plan and Stewardship Strategy for the watershed (SFARWG 2002).

Cosumnes River Task Force

The primary purpose of the Cosumnes River Task Force is to develop a Coordinated Resource Management Plan that stakeholders can use as a guide to identify resource concerns, plan and implement improvements, and collaborate on common goals to improve watershed health and flood management (CRTF 2002).

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Thresholds of Significance

The General Plan would have a significant impact if development would:

- place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or FIRM or other flood hazard delineation map;
- place within a 100-year flood hazard area structures that would impede or redirect floodflows;
- expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam; or
- result in inundation by seiche or mudflow.

Impacts related to mudflows are addressed in Section 5.9, Geology, Soils, and Mineral Resources, of this EIR and are not further discussed in this section. Because the potential for seismic activities on the west slope of the county is low and development standards are required for buildings within the 100-year floodplain, seiches are not expected to inundate any new development adjacent to lakes and reservoirs. As such, seiches are not analyzed further in this subsection.

Impact **5.8-5**

Risk of Exposure to Flood Hazards Within the 100-Year Floodplain. New development, including housing, could occur in the designated 100-year floodplain under all four alternatives. The County's Flood Damage Prevention Ordinance contains development standards applicable to all development within the 100-year floodplain that protects development and occupants from flood hazards and prohibits redirection or obstruction of flood flow. The potential for exposure of people and property to flood hazards is low and new development in the 100-year floodway would not impede or redirect flood flows. This impact is considered **less than significant**. Impact significance is shown in the table below.

Impact	Significance Before Mitigation*							
	Alt. #1 (No Project)		Alt. #2 (Roadway Constrained 6-Lane "Plus")		Alt. #3 (Environmentally Constrained)		Alt. #4 (1996 General Plan)	
	2025	Buildout	2025	Buildout	2025	Buildout	2025	Buildout
5.8-5: Risk of Exposure to Flood Hazards Within the 100-Year Floodplain	LS	LS	LS	LS	LS	LS	LS	LS
Mitigation	**Significance After Mitigation***							
	Alt. #1 (No Project)		Alt. #2 (Roadway Constrained 6-Lane "Plus")		Alt. #3 (Environmentally Constrained)		Alt. #4 (1996 General Plan)	
	2025	Buildout	2025	Buildout	2025	Buildout	2025	Buildout
N/A	LS	LS	LS	LS	LS	LS	LS	LS

* Notes: LS = Less than Significant; N/A= Not Applicable; S = Significant; SU = Significant and Unavoidable. Significant impacts are ranked against each other by alternative for the 2025 scenario and the buildout scenario, from 1 (Worst Impact) to 4 (Least Impact). Where the impact under two different alternatives during the same time frame would be roughly equal in severity, the numerical ranking is the same.

Environmental Impacts Common to All Equal-Weight Alternatives

The land use maps for all four alternatives designate land uses within the FEMA 100-year floodplain. For purposes of this analysis, the General Plan land use designations have been categorized based on the maximum intensity of land use allowed by each of the General Plan land use maps, as shown below:

- **High intensity:** high-density residential, medium-density residential, low-density residential (i.e., lot sizes ranging from 5 to 10 acres), multifamily residential, industrial, commercial, research and development, public facilities, and the adopted plan.
- **Medium intensity:** tourist recreational, rural land, rural residential (i.e., lot sizes ranging from 10 to 40 acres), and agricultural land.
- **Low intensity:** natural resources and open space. In general, these are areas expected to continue to function largely as undeveloped open space areas.

Within the 100-year floodplain, the risk of exposure to flood conditions would be the greatest in areas designated as high-intensity land uses, because the highest amount of development and thus the greatest number of people would be exposed to flood hazards. Medium-intensity land uses would result in the exposure of less development and fewer occupants to flood hazards; thus the risk is reduced correspondingly. Very few structures and occupants would

be expected in the low-intensity land uses areas; thus the risk is the least in these areas. The Table 5.8-6 shows the acreage in each category for each of the four alternatives.

Table 5.8-6
Designated Land Use Intensity Within the 100-Year Floodplain

General Plan Alternatives	Acreages of Various Intensity Land Uses			
	High	Medium	Low	Total
No Project [1]	2,026	2,202	3,875	8,103
Roadway Constrained 6-Lane "Plus"	1,984	1,275	4,845	8,103
Environmentally Constrained	1,753	1,870	4,480	8,103
1996 General Plan [1]	2,026	2,202	3,875	8,103

[1] Although the land use designations for the No Project Alternative and 1996 General Plan Alternative are the same, the overall development density and the number of development projects under the No Project Alternative would be substantially less than under the 1996 General Plan Alternative due to restrictions on land subdivision imposed by the Writ of Mandate.

Source: EPS 2002a-d, EDAW 2003

The acreage reflected under each of the land use intensity categories contains both developed and undeveloped lands. Development in the 100-year floodplain may be subject to property damage and occupants to injury or death caused by flood conditions during an 100-year flood event. Also, if critical emergency response facilities, such as hospitals, are constructed within the floodplain, the ability of the County to respond to emergencies during a flood event may be compromised.

Flood hazards may be averted by requiring new development to incorporate design measures that would protect structures and occupants from flood-related damage. Such hazards may also be averted by prohibiting certain types of development within the 100-year floodplain.

The County's Flood Damage Prevention Ordinance has incorporated various requirements into the County Zoning Ordinance that are applicable to development within the floodplain. Building permits, which are required for both discretionary and ministerial development are reviewed for consistency with the Flood Damage Prevention Ordinance before construction or development begins within the FEMA-designated 100-year floodplain (FEMA Flood Hazard Zones A and A1-30).

Developments within the floodplain are required to comply with development standards designed to minimize onsite flood damage. Within the floodplain, new construction and substantial improvements to existing structures require that the lowest floor be elevated above

the 100-year flood elevation. New nonresidential buildings must either meet these requirements or provide an alternative method of flood-proofing that is certified by a registered architect or engineer and approved by the County Building Department. In all areas within the 100-year floodplain, compliance with specialized standards of construction are required, including anchoring of all new construction and substantial improvements, the use of materials and equipment resistant to flood damage, and the use of methods and practices that minimize flood damage (e.g., watertight doors, reinforcement of walls, anchoring of structures, and accessory items).

The Flood Damage Prevention Ordinance places even stricter standards on development within the floodway. Rivers and streams where FEMA has prepared detailed engineering studies may be designated as floodways. For most waterways, the floodway is where the water is likely to be deepest and fastest. It is the area of the floodplain that should be reserved (kept free of obstructions) to allow floodwaters to move downstream. Placing fill or buildings in a floodway may block the flow of water and increase flood heights (FEMA 2003). The ordinance requires engineering studies to demonstrate that any proposed structures or substantial improvements to existing structures would not increase the flood elevation before such structures or improvements may be permitted within the floodway.

No Project Alternative (Alternative #1)

Relevant Goals/Policies—No Project Alternative

The relevant policies included in the 1996 General Plan that are applicable to the No Project Alternative are Policy 6.1.1.1 and Policies 6.4.1.1 through 6.4.1.5.

No Project Alternative (2025)—Impact Discussion

No Project Alternative and the 1996 General Plan Alternative have the most acres of high- and medium-intensity land use designation in the 100-year floodplain. However, due to the Writ of Mandate, outside of existing commitments (very little of which are mapped in a flood hazard zone), only single units on existing parcels are permitted to be built under the No Project Alternative scenario. Because the No Project Alternative results in the lowest overall development intensity, much of the potential development designated on the land use map would not occur. Therefore, in reality, the resultant development pattern has the lowest overall units of development in the 100-year floodplain. Thus, the risk would be the lowest under this alternative.

Policy 6.4.1.1 requires the County to participate in the NFIP and thus ensures that the most current 100-year floodplain delineations are used. Policy 6.4.1.3 would prohibit the construction of critical buildings (e.g., schools, hospitals, fire stations, and sheriff offices) within the floodplain in order to minimize a reduction in the County's emergency response capability. Critical buildings are discretionary projects, and would be subject to this policy. Development of new schools is subject to the California Department of Education site review process, which precludes the development of schools in the 100-year floodplain. The County's Emergency Operations Plan includes emergency response plans that contain protocols for agencies with emergency response responsibilities that would minimize the loss of human life. Policies 6.4.1.4 and 6.4.1.5 limit new development within the 100-year floodplain.

Given compliance with the Emergency Operations Plan, the policies described, and the Flood Damage Prevention Ordinance, new development within the floodplain would have a minimal potential to result in flood-related damage. This impact is considered less than significant.

No Project Alternative (Buildout)—Impact Discussion

Buildout under the No Project Alternative would further increase development on properties within the 100-year floodplain, but at a lower density. Please refer to No Project Alternative (2025)—Impact Discussion Above. This impact is considered less than significant.

Roadway Constrained 6-Lane "Plus" Alternative (Alternative #2)

Relevant Goals/Policies—Roadway Constrained 6-Lane "Plus" Alternative

The relevant policies that are applicable to the Roadway Constrained 6-Lane "Plus" Alternative are Policies CO-11b, HS-1c, HS-5a, HS-5b, HS-5c, HS-5d, and HS-5e.

Roadway Constrained 6-Lane "Plus" Alternative (2025)—Impact Discussion

As shown in Table 5.6-4, the designations on the land use map located within 100-year floodplain would consist of nearly as much high intensity designation as the No Project and 1996 General Plan Alternatives, but the acreage classified as medium land use intensities would be the lowest. The Roadway Constrained 6-Lane "Plus" Alternative allows legal parcels to be split into as many as four new parcels if land use designations permit the resulting density, and allows one unit to be constructed on each new parcel. Further subdivision is prohibited outside the existing commitments and dispersed land use patterns would result , as with the No Project Alternative; however, overall densities would be higher.

Policies HS-5c prohibits creation of new parcels that would be entirely within the 100-year floodplain and HS-5d would restrict development of parcels partially within the floodplain to the area of the parcel outside of the 100-year floodplain. Policy HS-5a would require the County to continue participating in the NFIP and thus would ensure that these or similar types of requirements would be enforced through 2025. Policy HS-5e would assist in ensuring that these development standards are applied to the correct areas. Policy HS-1c would prohibit the construction of critical buildings within the 100-year floodplain in so the County's emergency response capability is not affected. Policy HS-5b would discourage the development of discretionary projects within the 100-year floodplain. New development within the floodplain would have a minimal potential to result in flood-related damage with compliance with the Emergency Operations Plan, the policies described, and the Flood Damage Prevention Ordinance. This impact is considered less than significant.

Roadway Constrained 6-Lane "Plus" Alternative (Buildout)—Impact Discussion

Please refer to Roadway Constrained 6-Lane "Plus" Alternative (2025)—Impact Discussion above.

Environmentally Constrained Alternative (Alternative #3)

Relevant Goals/Policies—Environmentally Constrained Alternative

For the relevant policies of the Environmentally Constrained Alternative, please refer to the policies listed above under Relevant Goals/Policies—Roadway Constrained 6-Lane "Plus" Alternative.

Environmentally Constrained Alternative (2025)—Impact Discussion

As shown in Table 5.6-4, high intensity land use designations within 100-year floodplain would be the least of the four equal-weight alternatives, and acreage classified as medium land use intensities would be second highest. While this alternative would allow continued subdivision of land, Policies HS-5c and HS-5d would prohibit new development within the 100-year floodplain.

Please refer to Roadway Constrained 6-Lane "Plus" Alternative (2025)—Impact Discussion above.

Environmentally Constrained Alternative (Buildout)—Impact Discussion

Please refer to Environmentally Constrained Alternative (2025)—Impact Discussion above for policy and impact discussion. This impact is considered less than significant.

1996 General Plan Alternative (Alternative #4)

Relevant Goals/Policies—1996 General Plan Alternative

For the relevant policies of the 1996 General Plan Alternative, please refer to the policies listed above under Relevant Goals/Policies—No Project Alternative.

1996 General Plan Alternative (2025)—Impact Discussion

Similar to the Environmentally Constrained Alternative, subdivision of more than the existing commitment a is permitted under this alternative. The 1996 General Plan land use map allows more high intensity development within the 100-year floodplain than all other alternatives.

Please refer to No Project Alternative (2025)—Impact Discussion above for policy and impact discussion. This impact is considered less than significant.

1996 General Plan Alternative (Buildout)—Impact Discussion

Please refer to No Project Alternative (Buildout)—Impact Discussion above for policy and impact discussion. This impact is considered less than significant.

Impact **5.8-6**

Risk of Exposure to Flood Hazards Inside Dam Inundation Area. New developments in the High Hazard dam failure inundation areas could expose future occupants and property to flood hazards in the unlikely event of a dam failure. This impact is considered **potentially significant**. The severity of impact is based on potential exposure of development to dam inundation. The 1996 General Plan Alternative has the highest potential exposure, followed by the Environmentally Constrained Alternative, Roadway Constrained 6-Lane "Plus" Alternative, and the No Project Alternative. Impact significance before and after mitigation is shown in the table below.

Impact	Significance Before Mitigation*							
	Alt. #1 (No Project)		Alt. #2 (Roadway Constrained 6-Lane "Plus")		Alt. #3 (Environmentally Constrained)		Alt. #4 (1996 General Plan)	
	2025	Buildout	2025	Buildout	2025	Buildout	2025	Buildout
5.8-6: Risk of Exposure to Flood Hazards Inside Dam Inundation Area	S_4	S_4	S_2	S_2	S_3	S_3	S_1	S_1
Mitigation	**Significance After Mitigation***							
	Alt. #1 (No Project)		Alt. #2 (Roadway Constrained 6-Lane "Plus")		Alt. #3 (Environmentally Constrained)		Alt. #4 (1996 General Plan)	
	2025	Buildout	2025	Buildout	2025	Buildout	2025	Buildout
5.8-6(a): Prohibit Creation of New Parcels that are Entirely within Dam Failure Inundation Areas	SU_1	SU_1	SU_1	SU_1	SU_1	SU_1	SU_1	SU_1

* Notes: LS = Less than Significant; N/A= Not Applicable; S = Significant; SU = Significant and Unavoidable. Significant impacts are ranked against each other by alternative for the 2025 scenario and the buildout scenario, from 1 (Worst Impact) to 4 (Least Impact). Where the impact under two different alternatives during the same time frame would be roughly equal in severity, the numerical ranking is the same.

Environmental Impacts Common to All Equal-Weight Alternatives

For purposes of analysis of this impact, the General Plan land use designations have been categorized, based on the intensity of land use allowed by each of the General Plan land use maps, as High, Medium, and Low Intensity. The inundation areas of the nine High Hazard dams, Caples Lake Dam, and the Cameron Park Lake/Warren Hollister Dam, which have the greatest potential to cause injuries, death, or substantial structural damage, have land use designations in one of these three categories. The inundation areas snake through all market areas and are shown in Appendix A in the Roadway Constrained 6-Lane "Plus" and Environmentally Constrained Alternatives versions of the General Plan. Within the dam failure inundation areas, the risk of exposure to inundation conditions would be the greatest on parcels designated for high-intensity land uses. Medium-intensity land uses would result in the exposure of fewer occupants to dam failure inundation; thus the risk is reduced correspondingly. Very few structures and occupants would be expected in the Low-intensity land uses areas; thus the risk is the least in these areas.

The acreage reflected under each of the land use intensity categories contains both currently developed and undeveloped lands. Development in the dam failure inundation areas may be subject to property damage, and occupants may be subject to injury or death caused by flash

flood conditions during an 100-year flood event. Also, if critical emergency response facilities, such as hospitals, are constructed within the dam inundation area, the ability of the County to respond to emergencies may be compromised.

Table 5.8-7
Land Use Designations within Dam Failure Inundation Areas [1]

General Plan Alternatives	Acreages of Various Intensity Land Uses			
	High	Medium	Low	Total
No Project [2]	2,415	3,680	13,827	19,922
Roadway Constrained 6-Lane "Plus"	2,327	2,913	14,683	19,922
Environmentally Constrained	1,839	2,920	15,163	19,922
1996 General Plan [2]	2,415	3,680	13,827	19,922

[1] Only includes acreages within the inundation areas of the nine High Hazard dams located in the County, Caples Lake Dam, and the Cameron Park Lake/Warren Hollister Dam.

[2] Although the land use designations for the No Project Alternative and 1996 General Plan Alternative are the same, the overall development density and the number of development projects under the No Project Alternative would be less than under the 1996 General Plan Alternative due to restrictions on land subdivision imposed by the Writ.

C For the definition of high, medium, and low intensity, see Impact 5.8-5 description.

Source: EPS 2002a-d, EDAW 2003

No Project Alternative (Alternative #1)

Relevant Goals/Policies—No Project Alternative

The relevant policies included in the 1996 General Plan that are applicable to the No Project Alternative are Policies 6.1.1.1 and 6.4.2.1 and 6.4.2.2.

No Project Alternative (2025)—Impact Discussion

Policy 6.1.1.1 specifies development of implementation plans for disaster response. Policy 6.4.2.2 would prohibit the construction of certain types of critical buildings (e.g., hospitals) within dam failure inundation areas in order to minimize a reduction in the County's emergency response capability. Policy 6.4.2.1 would apply a zoning overlay for areas located within dam failure inundation zones. However, Policy 6.4.2.1 does not define the development standards and restrictions that may be required by the zoning overlay. As such, it may not adequately protect new development in the dam failure inundation areas from dam failure flooding hazards. This impact is considered potentially significant.

The 1996 General Plan land use map, which would be applicable to this alternative, allows more development in high and medium intensity land use designations within the dam failure inundation areas than the land use maps for the Roadway Constrained 6-Lane "Plus" Alternative and the Environmentally Constrained Alternative.

No Project Alternative (Buildout)—Impact Discussion

Under this alternative, by buildout there would be even greater amounts of new development on parcels within the dam failure inundation areas, but such development would be low density due to Writ restrictions. As discussed in No Project Alternative (2025)—Impact Discussion above, this would result in a potentially significant impact.

Roadway Constrained 6-Lane "Plus" Alternative (Alternative #2)

Relevant Goals/Policies—Roadway Constrained 6-Lane "Plus" Alternative

The relevant policies that are applicable to the Roadway Constrained 6-Lane "Plus" Alternative are Policies HS-1c, and HS-5b.

Roadway Constrained 6-Lane "Plus" Alternative (2025)—Impact Discussion

Under this alternative, new development could occur within the dam failure inundation areas by 2025. As shown in Table 5.8-7, the land use map for this alternative includes the second highest acreage of land with the High and Medium Intensity land use designations within potential inundation areas.

Policy HS-1c would prohibit the construction of certain types of critical buildings (e.g., hospitals) within dam failure inundation areas in order to minimize a reduction in the County's emergency response capability. Policy HS-5b requires the County to discourage development within dam failure inundation areas; however, no mechanism exists to prevent new ministerial development from occurring. Development of additional housing units and other types of land uses within the dam failure inundation areas would be allowed under this alternative, and no laws or policies would prevent these developments on the basis of protection from dam failure inundation. Compliance with the Emergency Operations Plan during a dam failure emergency could minimize the loss of human lives. However, the potential for injuries, death, and damage from flash flooding that could occur during the unlikely event of a dam failure cannot be eliminated. This impact is considered potentially significant.

Roadway Constrained 6-Lane "Plus" Alternative (Buildout)—Impact Discussion

Additional development would occur in the dam failure inundation areas by buildout, and the risk under the buildout timeframe would be second lowest. Please see Roadway Constrained 6-Lane "Plus" Alternative (2025)—Impact Discussion above. This impact is considered potentially significant.

Environmentally Constrained Alternative (Alternative #3)

Relevant Goals/Policies—Environmentally Constrained Alternative

For the relevant policies of the Environmentally Constrained Alternative, please refer to the policies listed above under Relevant Goals/Policies—Roadway Constrained 6-Lane "Plus" Alternative.

Environmentally Constrained Alternative (2025)—Impact Discussion

Under this alternative new development is permitted within dam failure inundation areas. As shown in Table 5.8-7, the land use map for this alternative contains the smallest acreage within High and Medium Intensity land use designations. However, this alternative would allow subdivisions. The ability to subdivide provides more incentive for development to occur at close to the maximum density permitted under the land use designations. The resulting developments within these designations could be substantially more dense as compared to development that will occur in these same land use designations under the No Project and Roadway Constrained 6-Lane "Plus" Alternatives.

Please see Roadway Constrained 6-Lane "Plus" Alternative (2025)—Impact Discussion above. This impact is considered potentially significant.

Environmentally Constrained Alternative (Buildout)—Impact Discussion

Additional developments, including subdivisions, could occur in the dam failure inundation areas by buildout, and the risk under this alternative would be second highest. Please see Roadway Constrained 6-Lane "Plus" Alternative (2025)—Impact Discussion for policy and impact discussion. This impact is considered potentially significant.

1996 General Plan Alternative (Alternative #4)

Relevant Goals/Policies—1996 General Plan Alternative

For the relevant policies of the 1996 General Plan Alternative, please refer to the policies listed above under Relevant Goals/Policies—No Project Alternative.

1996 General Plan Alternative (2025)—Impact Discussion

Under this alternative, there would be more development, including subdivisions, within the dam failure inundation areas than for the other alternatives. As shown in Table 5.8-7, the land use map for this alternative contains the highest acreage totals of High and Medium Intensity land use designations.

Please see No Project Alternative (2025)—Impact Discussion and Environmentally Constrained (2025)—Impact Discussion above. This impact is considered potentially significant.

1996 General Plan Alternative (Buildout)—Impact Discussion

Additional development, including subdivisions, would occur in the dam failure inundation areas by buildout. Because this alternative would allow more development than the other alternatives, the risk under this alternative would be the highest at buildout. Please see No Project Alternative (2025)—Impact Discussion and Environmentally Constrained Alternative (2025) for policy and impact discussion. This impact is considered potentially significant.

Mitigation Measure 5.8-6—No Project Alternative

The County shall implement both of the following measures:

< Mitigation Measure 5.8-6(a): Prohibit Creation of New Parcels that are Entirely within Dam Failure Inundation Areas

These potential mitigation measures are described below.

Mitigation Measure 5.8-6(a): Prohibit Creation of New Parcels that are Entirely within Dam Failure Inundation Areas

The County shall revise Policies 6.4.1.4 and 6.4.1.5 as follows:

> **Revised Policy 6.4.1.4:** Creation of new parcels which lie entirely within the 100-year floodplain as identified on the most current version of the flood insurance rate maps provided by FEMA or dam failure inundation areas as delineated in dam failure emergency response plans maintained by the County shall be prohibited.
>
> **Revised Policy 6.4.1.5:** New parcels which are partially within the 100-year floodplain or dam failure inundation areas as delineated in dam failure emergency response plans maintained by the County must have sufficient land available outside the FEMA or County designated 100-year floodplain or the dam inundation areas for construction of dwelling units, accessory structures, and septic systems. Discretionary applications shall be required to determine the location of the designated 100-year floodplain and identified dam failure inundation areas on the subject property.

These policy revisions would reduce this impact, but not to a less-than-significant level. Existing parcels that are entirely within the dam failure inundation areas would not be affected by this policy and could become inundated in the unlikely event of a dam failure. As such, this impact would be significant and unavoidable.

Mitigation Measure 5.8-6—Roadway Constrained 6-Lane "Plus" Alternative

The County shall implement both of the following measures:

< Mitigation Measure 5.8-6(a): Prohibit Creation of New Parcels that are Entirely within Dam Failure Inundation Areas

This potential mitigation measure is described below.

Mitigation Measure 5.8-6(a): Prohibit Creation of New Parcels that are Entirely within Dam Failure Inundation Areas

The County shall revise Policies HS-5c, HS-5d, and HS-5e as follows:

Revised Policy HS-5c: The creation of new parcels that lie entirely within the 100-year floodplain or dam failure inundation areas as delineated in dam failure emergency response plans maintained by the County shall be prohibited.

Revised Policy HS-5d: New parcels that are partially within the 100-year floodplain or dam failure inundation areas must have sufficient land available outside the 100-year floodplain or dam failure inundation areas for construction of dwelling units, accessory structures, and septic systems.

Revised Policy HS-5e: Applications for discretionary development proposed in an area within or adjacent to a designated 100-year floodplain or dam failure inundation area shall include a map showing the location of the floodplain and the dam failure inundation area relative to the proposed development.

These policy revisions individually would reduce this impact, but not to a less-than-significant level. Please see the discussion under the No Project Alternative. This impact would be significant and unavoidable.

Mitigation Measure 5.8-6—Environmentally Constrained Alternative

Please refer to the proposed mitigation measures for the Roadway Constrained 6-Lane "Plus" Alternative above. With implementation of these mitigation measures, impacts would be significant and unavoidable.

Mitigation Measure 5.8-6—1996 General Plan Alternative

Please refer to the proposed mitigation measures for the No Project Alternative above. With implementation of these mitigation measures, impacts would be significant and unavoidable.

5.8.3 ELECTROMAGNETIC FIELDS

Electric and magnetic fields are invisible lines that surround any electrical device, including wireless phone facilities and electrical transmission lines. Together these fields are called electromagnetic fields (EMFs). Electric and magnetic energy travels in a wave that is commonly referred to as electromagnetic radiation or radiofrequency radiation. EMF indicates the presence of electromagnetic or radiofrequency energy.

This following analysis is based on information obtained from federal and State agencies. EMF generated by potential wireless phone facilities and electric devices are compared to existing

standards to determine if established standards would be exceed as a result of the development pursuant to the General Plan.

EXISTING CONDITIONS

Physical Environment

Forms of Electromagnetic Fields

There are several forms of EMFs, depending on the wavelength and frequency of the radiation. The frequency is usually expressed in terms of a unit called the hertz (Hz). One million hertz is known as a megahertz (MHz). The different forms of EMFs are produced by a variety of sources, including electrical energy facilities and wireless phone facilities.

EMFs may also be differentiated based on the ability of the particular EMF to cause ionization, a process that can produce molecular changes that can lead to damage in biological tissue, including genetic material. Changes in the genetic material may be a cause of cancer. Those types of electromagnetic radiation with enough energy to ionize biological material include X-radiation (1 trillion MHz) and gamma radiation. The energy level associated with electric energy facilities and wireless phone facilities are classified as nonionizing (FCC 2003, Moulder 2003).

Sources

Electric energy facilities and wireless phone facilities typically generate the greatest public interest on issues of public safety. These facilities are described below.

Electric Energy Facilities

All types of electric energy facilities and appliances generate EMFs. In part because of their visibility in areas with human habitation, electric energy transmission facilities, such as transmission lines, generate the greatest public concern. Electric energy facilities generate EMFs at a frequency of 60 Hz. At this frequency, the EMF is considered nonionizing and is not expected to cause molecular changes that lead to the damage of body tissue (Moulder 2003).

Wireless Phone Facilities

In urban areas, the primary wireless phone facility of concern is the base station, otherwise known as a cellular phone tower. The base station has two major components. The first is the antenna or dish, which is the source of an EMF. The second component is the support structure, which does not emit an EMF. The support structure may be a tower, a pole, a building, or a sign post. Wireless phone facilities typically generate EMFs at a frequency of between 800 and 2200 MHz. At this frequency, the EMF is considered nonionizing and is not expected to cause molecule changes that lead to the damage of body tissue (Moulder 2003).

Dissipation

Once emitted from the source, an EMF dissipates in a circular pattern and weakens as the distance from the emitting source increases. Electrical fields are shielded or weakened by materials that conduct electricity (including trees, buildings, and human skin). Magnetic fields, on the other hand, pass through most materials and are therefore more difficult to shield (CPUC 2003).

Research on Health Effects

A variety of epidemiological and laboratory studies, including those sponsored and funded by international, federal, and state organizations and agencies, have been carried out regarding EMF exposure and its potential human health risks. With regard to electric energy facilities, a connection between exposure to the type of EMF generated by electric energy facilities and childhood cancer (e.g., leukemia) has been suggested. However, studies have not concluded that there is such a connection. With regard to wireless phone facilities, no studies have concluded that exposure to the type of EMF generated by wireless phone facilities causes cancer (FCC 2003). However, studies have shown that highly intense exposure to EMFs from wireless phone facilities, at levels more than 10 times higher than allowed under the Federal Communications Commission's (FCC's) standards, may result in cataracts, skin burns, deep burns, heat exhaustion, and heat stroke (Moulder 2003). Studies of both types of EMFs are ongoing.

Regulatory Planning Environment

Telecommunications Act of 1996

The Telecommunications Act of 1996 became effective on February 8, 1996. This act limits the authority of a state or local government over decisions regarding the placement, construction, and modification of personal wireless services as follows:

< SEC. 704.(7)B(iv). No State or local government or instrumentality thereof may regulate the placement, construction, and modification of personal wireless service facilities on the basis of the environmental effects of radio frequency emissions to the extent that such facilities comply with the [FCC]'s regulations concerning such emissions.

< SEC. 704.(7)B(iii). Any decision by a State or local government or instrumentality thereof to deny a request to place, construct, or modify personal wireless service facilities shall be in writing and supported by substantial evidence contained in a written record.

Federal Communications Commission

Regulations on wireless phone facilities are administered by the Federal Communications Commission (FCC). On August 1, 1996, the FCC adopted the Maximum Permissible Exposure (MPE) standards[2] for field strength and power density for certain types of transmitters, including those used in wireless communications.

As a general rule, these MPE standards would not be exceeded at more than 20 feet from the typical antenna. Ground-level exposure to EMFs generated by antennas that are mounted on towers would be far less than the MPE limits. The primary situation in which the MPE standards may be exceeded would be if an antenna were mounted within 20 feet of areas that are accessible to people, such as when antennas are mounted on and near rooftops without restricted access. However, distances from antennas that are required for compliance with these standards vary depending on the specific make and type of wireless phone antenna (Moulder 2003).

[2] The FCC's MPE standards for cellular towers are as follows: 0.57 milliwatts per square centimeter for emissions at 900 Mhz and 1.0 milliwatts per square centimeter for emissions at 1800 to 2000 MHz.

The MPE standards apply to all new transmitters licensed after October 1997; preexisting facilities had to be brought into compliance by September 2000. These MPE limits were recommended by the National Council on Radiation Protection and Measurements and endorsed by other federal agencies; the limits were developed following a study pursuant to the National Environmental Policy Act that required the FCC to evaluate the health effects of emissions from transmitters that the FCC regulates as authorized by the Telecommunications Act. The MPE limits are enforced whenever applications are submitted to the FCC for construction or modification of a transmitting facility or renewal of a license (FCC 2003).

U.S. Department of Health and Human Services

The National Institute of Environmental Health Sciences, one of the divisions of the U.S. Department of Health and Human Services, administered the Electric and Magnetic Fields Research and Public Information Dissemination (EMF-RAPID) Program. The EMF-RAPID Program was a 6-year, federally coordinated effort to evaluate developing technologies and research on the effects on biological systems of exposure to EMFs produced by electric energy facilities (NIEHS 2003). In its final report to Congress, the EMF-RAPID Program concluded that "scientific evidence suggesting exposures [of EMF generated by electric energy facilities] pose any health risk is weak [the EMF-RAPID Program] concludes that exposure [of EMF generated by electric energy facilities] cannot be recognized as entirely safe because of weak scientific evidence that exposure may pose a leukemia hazard. In our opinion, this finding is insufficient to warrant aggressive regulatory concern" (NIEHS 1999). The U.S. Department of Health and Human Services has thus far not adopted any requirements or standards regarding EMF exposure.

California Public Utilities Commission

In 1991, the California Public Utilities Commission (CPUC) began an investigation into the possible health effects of EMFs. A Consensus Group comprising citizens, utility representatives, union representatives, and public officials was established to define near-term research objectives and develop interim procedures to guide electric utilities in educating their customers, reducing EMF levels, and responding to potential health concerns. The Consensus Group concluded that it "finds that the body of scientific evidence continues to evolve. However, it is recognized that public concern and scientific uncertainty remain regarding the potential health effects of exposure [of EMFs generated by electric energy facilities]. [The Consensus Group] does not find it appropriate to adopt any specific numerical standards in association with EMF until [there is] a firm scientific basis for adopting any particular value" (CPUC 2003). The CPUC, based upon these findings, recommended that the state's utilities

carry out "no and low cost EMF avoidance measures" in construction of new and upgraded utility projects. However, no requirements were established (CPUC 2003).

California Department of Health Services

In association with CPUC, DHS manages the California Electric and Magnetic Fields Program, which consists of a research component and an education and technical assistance component. Studies conducted by this program, including the School Exposure Assessment Survey, have found that the strength of EMFs in schools tends to be similar to or slightly lower than the strength of EMFs at homes. The five primary sources of EMFs at schools were net currents from faulty wiring, fluorescent lights, distribution lines, electric panels, and office equipment (CPUC 2003).

California Department of Education

Regulations adopted by the California Department of Education require minimum distances between new schools and the edge of transmission line rights-of-way. The setback guidelines are:

< 100 feet for 50- to 133-kilovolt (kV) lines,
< 150 feet for 220- to 230-kV lines, and
< 350 feet for 500- to 550-kV lines.

These requirements were not based on specific health effects, but on the prudent rationale that the EMF drops to background levels at the specified distances (CPUC 2003).

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Thresholds of Significance

Adoption of the General Plan would have a significant impact if development would result in:

< location of school structures less than 100 feet from 50 133 kV lines, 150 feet from 220 230 kV lines, or 350 feet from 500 550 kV lines; or

< location of wireless phone antennas less than 20 feet from human occupation areas or other exposure of people to EMFs that exceed all applicable standards.

Impact **5.8-7**

Exposure to Electromagnetic Fields Generated by New Electric Energy Facilities at School Locations. Additional growth in the county under all alternatives would generate the need for additional electrical energy facilities that, if placed near schools, would result in the exceedance of EMF exposure standards. This impact is considered **potentially significant**. Because there is a direct correlation between population growth and the need for schools and electric transmission facilities, this impact has the greatest potential for occurrence in 2025 under the 1996 General Plan and the Environmentally Constrained Alternatives, followed by the Roadway Constrained 6-Lane "Plus" and No Project Alternatives. At buildout the 1996 General Plan Alternative has the greatest potential for this impact, followed by the Environmentally Constrained, Roadway Constrained 6-Lane "Plus," and No Project Alternatives. Impact significance before and after mitigation is shown in the table below.

Impact	Significance Before Mitigation*							
	Alt. #1 (No Project)		Alt. #2 (Roadway Constrained 6-Lane "Plus")		Alt. #3 (Environmentally Constrained)		Alt. #4 (1996 General Plan)	
	2025	Buildout	2025	Buildout	2025	Buildout	2025	Buildout
5.8-7: Exposure to Electromagnetic Fields Generated by New Electric Energy Facilities at School Locations	S_3	S_4	S_2	S_3	S_1	S_2	S_1	S_1
Mitigation	**Significance After Mitigation***							
	Alt. #1 (No Project)		Alt. #2 (Roadway Constrained 6-Lane "Plus")		Alt. #3 (Environmentally Constrained)		Alt. #4 (1996 General Plan)	
	2025	Buildout	2025	Buildout	2025	Buildout	2025	Buildout
5.8-7, Encourage Coordination Between Utilities and School Districts	SU_3	SU_4	SU_2	SU_3	SU_1	SU_2	SU_1	SU_1

* Notes: LS = Less than Significant; N/A= Not Applicable; S = Significant; SU = Significant and Unavoidable. Significant impacts are ranked against each other by alternative for the 2025 scenario and the buildout scenario, from 1 (Worst Impact) to 4 (Least Impact). Where the impact under two different alternatives during the same time frame would be roughly equal in severity, the numerical ranking is the same.

No Project Alternative (Alternative #1)

Relevant Goals/Policies—No Project Alternative

The relevant policies included in the 1996 General Plan that are applicable to the No Project Alternative are Policies 5.6.1.1 and 5.6.1.3.

No Project Alternative (2025)—Impact Discussion

Under this alternative new development would generate population growth. Both new schools and new electric energy facilities, which would generate EMF, would be needed to serve the growth. While California Department of Education regulations require new schools to be sited consistent with transmission line setback requirements, there are currently no regulations applicable to the siting of new electrical transmission lines near existing schools. Because the County has no authority to determine the siting of these facilities, they may be built in any land use designations throughout of the County. If new electric energy facilities were to be constructed adjacent to existing and new schools, then the standards established by the California Department of Education may be exceeded.

Undergrounding of power transmission lines may increase under Policy 5.6.1.1. Undergrounding may make transmission lines less visible and thus generate less public concern, but evaluation of distance from all power transmission lines to school sites would be required during the development of new schools. Future transmission lines may be constructed in open space greenbelt corridors under Policy 5.6.1.3. Fewer new schools may be expected near open space greenbelt corridors, but this policy would not preclude transmission lines from being located adjacent to schools. As such, future electrical energy facilities, such as power transmission lines, may be built adjacent to existing and future school sites. This impact is considered potentially significant.

Of the four General Plan alternatives, population growth by 2025 would be lowest under the No Project Alternative. Correspondingly, the number of schools (see Section 5.7) and electric energy facilities required would be the lowest under this alternative. Given that the least number of facilities would be needed by this alternative, the risk associated with this potential impact would also be the lowest under this alternative.

No Project Alternative (Buildout)—Impact Discussion

By County buildout, both new schools and new electric energy facilities would be needed to serve the population growth. As discussed above for 2025, this impact is considered potentially significant.

Roadway Constrained 6-Lane "Plus" Alternative (Alternative #2)

Relevant Goals/Policies—Roadway Constrained 6-Lane "Plus" Alternative

The relevant policies that are applicable to the Roadway Constrained 6-Lane "Plus" Alternative are Policies LU-6g and PS-10b.

Roadway Constrained 6-Lane "Plus" Alternative (2025)—Impact Discussion

Policy LU-6g promotes undergrounding of utilities in Community Regions and Rural Centers and Policy PS-10a directs the County to work with utilities to avoid adverse affects in the design and location of new facilities. As described above, the County has no land use authority in this regard. Please refer to No Project Alternative (2025)—Impact Discussion above. This impact is considered potentially significant. The second lowest number of schools would be required under this alternative.

Roadway Constrained 6-Lane "Plus" Alternative (Buildout)—Impact Discussion

Please refer to No Project Alternative (2025)—Impact Discussion above. This impact is considered potentially significant. The third highest number of schools would be required under this alternative.

Environmentally Constrained Alternative (Alternative #3)

Relevant Goals/Policies—Environmentally Constrained Alternative

For the relevant policies of the Environmentally Constrained Alternative, please refer to the policies listed above under Relevant Goals/Policies—Roadway Constrained 6-Lane "Plus" Alternative.

Environmentally Constrained Alternative (2025)—Impact Discussion

Please refer to Roadway Constrained 6-Lane "Plus" Alternative (2025)—Impact Discussion for impact and policy discussion. This impact is considered potentially significant. The highest number of schools would be needed under the Environmentally Constrained Alternative and the 1996 General Plan Alternative by 2025.

Environmentally Constrained Alternative (Buildout)—Impact Discussion

Please refer to Roadway Constrained 6-Lane "Plus" Alternative (2025)—Impact Discussion for impact and policy discussion. This impact is considered potentially significant. The second highest number of schools would be needed under the this alternative at buildout.

1996 General Plan Alternative (Alternative #4)

Relevant Goals/Policies—1996 General Plan Alternative

For the relevant policies of the 1996 General Plan Alternative, please refer to the policies listed above under Relevant Goals/Policies—No Project Alternative.

1996 General Plan Alternative (2025)—Impact Discussion

Please refer to No Project Alternative (2025)—Impact Discussion for impact and policy discussion. This impact is considered potentially significant. The highest number of schools would be needed under the this alternative (and the Environmentally Constrained Alternative) by 2025, and the EMF exposure risk associated with the exceedance of California Department of Education standards would also be the highest under this alternative.

1996 General Plan Alternative (Buildout)—Impact Discussion

Please refer to No Project Alternative (2025)—Impact Discussion for impact and policy discussion. The highest number of schools would be needed under the this alternative at buildout.

Mitigation Measure 5.8-7—All Alternatives

The County does not have authority on the siting of schools and electric energy facilities. However, this measure is proposed to assist in the avoidance of impacts from siting powerlines in close proximity to schools.

Mitigation Measure 5.8-7: Encourage Coordination between Utilities and School Districts

> **New Policy.** The County shall encourage the coordination between utilities constructing powerlines and school districts to avoid placement of powerlines in close proximity to schools.

Because the County does not have approval authority over schools and utilities, this impact would be significant and unavoidable for all alternatives.

Impact **5.8-8**

Exposure to Electromagnetic Fields Generated by Wireless Phone Facilities. Compliance with the FCC's standards on EMF would ensure that new wireless phone facilities would not expose people to EMF at levels that would be considered by the FCC to be unhealthful under all alternatives. This impact is considered **less than significant**.

Impact	Significance Before Mitigation*							
	Alt. #1 (No Project)		Alt. #2 (Roadway Constrained 6-Lane "Plus")		Alt. #3 (Environmentally Constrained)		Alt. #4 (1996 General Plan)	
	2025	Buildout	2025	Buildout	2025	Buildout	2025	Buildout
5.8-8: Exposure to Electromagnetic Fields Generated by Wireless Phone Facilities	LS	LS	LS	LS	LS	LS	LS	LS
Mitigation	**Significance After Mitigation***							
	Alt. #1 (No Project)		Alt. #2 (Roadway Constrained 6-Lane "Plus")		Alt. #3 (Environmentally Constrained)		Alt. #4 (1996 General Plan)	
	2025	Buildout	2025	Buildout	2025	Buildout	2025	Buildout
N/A	LS	LS	LS	LS	LS	LS	LS	LS

* Notes: LS = Less than Significant; N/A= Not Applicable; S = Significant; SU = Significant and Unavoidable. Significant impacts are ranked against each other by alternative for the 2025 scenario and the buildout scenario, from 1 (Worst Impact) to 4 (Least Impact). Where the impact under two different alternatives during the same time frame would be roughly equal in severity, the numerical ranking is the same.

No Project Alternative (Alternative #1)

Relevant Goals/Policies—No Project Alternative

The relevant policy included in the 1996 General Plan that is applicable to the No Project Alternative is Policy 5.6.1.4.

No Project Alternative (2025)—Impact Discussion

Under this alternative new development would occur throughout the county. The use of wireless phones would increase, generating the need for additional wireless phone facilities.

New wireless phone facilities may be constructed near residences, business buildings, and other structures designed for human occupation. Policy 5.6.1.4 would require the review of the effects of new wireless phone facilities on the basis of health and safety, but the County's authority to deny approval for wireless phone facilities for the reason of health effects of EMF has been preempted by FCC's regulations. Instead, the development of new wireless phone facilities would be required to comply with FCC standards for EMF exposure and antennas would not be expected within 20 feet of areas accessible to people or otherwise exceed the FCC's exposure standards. This impact is considered less than significant.

No Project Alternative (Buildout)—Impact Discussion

By buildout, new wireless phone facilities and new land uses designed for human occupation would be needed to serve the population growth. Please refer to No Project Alternative (2025)—Impact Discussion for policy and impact discussion. This impact is considered less than significant.

Roadway Constrained 6-Lane "Plus" Alternative (Alternative #2)

Relevant Goals/Policies—Roadway Constrained 6-Lane "Plus" Alternative

No policies are applicable.

Roadway Constrained 6-Lane "Plus" Alternative (2025)—Impact Discussion

By 2025, growth under this alternative would generate the need for new wireless phone facilities. Compliance with FCC standards would ensure that new wireless phone facilities would not result in an exceedance of FCC standards. This impact is considered less than significant.

Roadway Constrained 6-Lane "Plus" Alternative (Buildout)—Impact Discussion

As discussed above, growth under this alternative would generate the need for new wireless phone facilities and new land uses designed for human occupation. Please refer to Roadway Constrained 6-Lane "Plus" Alternative (2025)—Impact Discussion above. This impact is considered less than significant.

Environmentally Constrained Alternative (Alternative #3)

Relevant Goals/Policies—Environmentally Constrained Alternative

No policies are applicable.

Environmentally Constrained Alternative (2025)—Impact Discussion

Please refer to Roadway Constrained 6-Lane "Plus" Alternative (2025)—Impact Discussion for impact discussion. This impact is considered less than significant.

Environmentally Constrained Alternative (Buildout)—Impact Discussion

Please refer to Roadway Constrained 6-Lane "Plus" Alternative (2025)—Impact Discussion above. This impact is considered less than significant.

1996 General Plan Alternative (Alternative #4)

Relevant Goals/Policies—1996 General Plan Alternative

For the relevant policies of the 1996 General Plan Alternative, please refer to the policy listed above under Relevant Goals/Policies—No Project Alternative.

1996 General Plan Alternative (2025)—Impact Discussion

Please refer to No Project Alternative (2025)—Impact Discussion for policy and impact discussion. This impact is considered less than significant.

1996 General Plan Alternative (Buildout)—Impact Discussion

Please refer to No Project Alternative (2025)—Impact Discussion above. This impact is considered less than significant.

5.8.4 NATURALLY OCCURRING ASBESTOS

EXISTING CONDITIONS

Physical Environment

Asbestos is a term applied to several types of naturally occurring fibrous materials found in rock formations throughout California. Asbestos is commonly found in ultramafic rock, including serpentine, that is abundant in the foothills of the Sierra Nevada. Asbestos has been mined in several localities throughout the Sierra Nevada, including the northwest portion of El Dorado County. Historically, asbestos has been used in manufactured goods because of its fibrous and heat-resistant characteristics. Serpentine rock, which often contains asbestos, has also been used extensively as base material in the construction of new roads. Exposure and disturbance of rock and soil that contains asbestos can result in the release of fibers to the air and consequent exposure to the public. All types of asbestos are now considered hazardous and pose public health risks. The use of asbestos-containing materials is regulated by the California Air Resources Board (CARB) and the County.

Two forms of asbestos are associated with the serpentinite association: chrysotile asbestos and tremolite/actinolite asbestos. Chrysotile asbestos occurrences are present in serpentinite bodies in western El Dorado County and were observed during field work supporting the California Department of Conservation (DOC) report that supports the analysis below. Tremolite asbestos is likely the most common amphibole mineral group asbestos in California, and is found in most counties of the Sierra Nevada and Klamath Mountains; it most commonly occurs as slip fiber veins associated with fault or shear zones in serpentinite (DOC 2000).

The potential occurrence and distribution of asbestos in El Dorado County has been well researched and documented. The DOC has developed an environmental-asbestos map for western El Dorado County, entitled "Areas More Likely to Contain Natural Occurrences of Asbestos in Western El Dorado County," and a corresponding open-file report. It should be noted that this report and map focus on identifying geologic conditions that suggest natural occurrences of asbestos may be present. It does not indicate whether asbestos minerals are actually present or absent in bedrock or soil associated with a particular parcel of land (DOC 2000).

The DOC report and map evaluates the likelihood for natural occurrence of asbestos associated with various map units and geologic features. Asbestos likelihood is organized into the following categories (shown in decreasing relative likelihood):

- areas most likely to contain asbestos,
- faults and fault zones,
- areas where the presence of asbestos is possible but unlikely,
- carbonate rocks that may contain asbestos, and
- undesignated areas that probably do not contain asbestos.

The areas designated as "most likely to contain asbestos" are associated with areas with high concentrations of ultramafic rocks and serpentinite.

Exhibit 5.8-2 represents areas more likely to contain naturally occurring asbestos on the west slope of El Dorado County as determined by the DOC's California Geologic Survey (CGS); Table 5.8-8 presents this same information in tabular format and is organized by market area. Generally, the mapping indicates that the presence of naturally occurring asbestos is scattered throughout the west slope of the county, with significant concentrations found in Market Area #1 (El Dorado Hills), Market Area #2 (Cameron Park/Shingle Springs/Rescue), Market Area #5 (Coloma/Gold Hill), Market Area #8 (Latrobe), Market Area #10 (Cool/Pilot Hill), and Market Area #11 (Georgetown/Garden Valley). Asbestos areas commonly border, but are not limited to, existing fault systems including the Maidu Fault Zone, West Bear Mountains Fault, East Bear Mountains fault, El Dorado Fault, and the Melones Fault Zone of the Clark, Gillis Hill Fault.

Asbestos Monitoring in El Dorado County

Since April 1998, CARB has implemented an asbestos air monitoring program to determine the levels, or concentrations, of airborne asbestos at selected sites throughout El Dorado County. The monitoring program consists of general monitoring (i.e, monitoring at random locations throughout the county) and monitoring near a potential asbestos source.

Overall, 195 of the 252 results associated with the general monitoring program were found to be below the minimum detection limit (MDL), which is the threshold level below which the amount of asbestos being sampled cannot be quantified accurately.

The MDL for asbestos can vary depending on the volume of the air which is drawn through the filter and the amount of the filter analyzed. No safe asbestos exposure level has been established for residential areas (CARB 2002). The results of asbestos monitoring at preselected locations are presented below. More detailed information on the monitoring program, including asbestos concentrations and sampling dates, is available on the Internet at <www.arb.ca.gov/toxics/asbestos/monitoring.htm>.

Exhibit 5.8-2, B&W, 81/2 x 11

Table 5.8-8 Areas More Likely to Contain Naturally Occurring Asbestos			
Market Area	**Areas Likely to Contain Naturally Occurring Asbestos (acres)**	**Percentage of Market Area**	**Percentage of Total Naturally Occurring Asbestos**
1: El Dorado Hills	2,763.9	9.8%	8.5%
2: Cameron Park/Shingle Springs/Rescue	4,419.4	10.8%	13.6%
3: Diamond Springs	365.4	1.2%	1.1%
4: Placerville/Camino	256.0	1.0%	0.8%
5: Coloma/Gold Hill	4,600.1	17.6%	14.1%
6: Pollock Pines	0	0%	0%
7: Pleasant Valley	425.5	1.0%	1.3%
8: Latrobe	5,650.7	16.0%	17.3%
9: Somerset	0	0%	0%
10: Cool/Pilot Hill	4,766.0	10.5%	14.6%
11: Georgetown/Garden Valley	9,035.8	6.7%	27.7%
12: Lake Tahoe Basin [1]	—	—	—
13: American River [1]	—	—	—
14: Mosquito	322.6	2.1%	1.0%
TOTAL	**32,605.3**	**N/A**	**100%**

[1] Not evaluated in the study.

Source: Department of Conservation 2000; EDAW 2003

- Near a potential asbestos source: 87 of the 110 samples were found to be above the MDL.
- Silva Valley: Five of the 35 samples were found to be above the MDL.
- Garden Valley: 32 of the 38 samples were found to be above the MDL.
- Woedee Drive: None of the samples were found to be above the MDL.

Regulatory/Planning Environment

Asbestos Airborne Toxic Control Measures for Surfacing Applications

In July 2000, CARB approved amendments to the 1990 Asbestos Airborne Toxic Control Measure (ATCM) for Surfacing Applications. The amended Asbestos ATCM prohibits the sale

or use of restricted material for unpaved surfacing unless it has been tested and found to have an asbestos content that is less than 0.25%. The ATCM specifies approved test methods for determining asbestos content.

If restricted material is being sold or supplied for surfacing purposes, the producer of the material (quarry operator) must provide specific types of information, including the amount of material sold or supplied; the dates the material was sold or supplied, sampled and tested; and a statement verifying that the asbestos content of the material is less than 0.25%. These requirements apply to anyone who sells or supplies restricted material, even if the seller or supplier did not extract the material from the ground. If restricted material is being sold or supplied for nonsurfacing purposes, such as fill or base, the supplier must notify the recipient with a warning statement that the material may contain asbestos.

Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations

CARB subsequently approved another asbestos-related ATCM in July 2001 dealing with construction, grading, quarrying, and surface mining operations. This ATCM specifies that road construction and maintenance activities and quarrying and surface mining in areas where naturally occurring asbestos is likely to be found must employ the best available dust mitigation measures and prevent visible emissions from crossing the project boundaries. For construction and grading projects that would disturb 1 acre or less, the regulation requires specific actions to minimize dust emissions, including vehicle speed limitations, application of water before and during the ground disturbance, wetting down or covering of storage piles, and track-out prevention and removal. Construction projects that would disturb more than 1 acre, including all quarries and surface mines, must prepare a Contingent Asbestos Hazard Dust Mitigation Plan and receive approval of the plan from the air pollution control district. The asbestos dust mitigation plan must specify how the project would minimize emissions addressing specific emission sources. In addition, mines/quarries must meet specific opacity standards for certain types of equipment and ensure that there are no visible emissions crossing the property line.

Naturally Occurring Asbestos and Dust Protection Ordinance (El Dorado County Ordinance No. 4548)

In response to the two ATCMs established by CARB, the County enacted Ordinance No. 4548 (Naturally Occurring Asbestos and Dust Protection), which established Chapter 8.44, Title 8, of the County Code. This ordinance requires asbestos testing of surface materials and submittal/approval of a Contingent Asbestos Hazard Dust Mitigation Plan for grading/mining activities in areas identified on the Potential Asbestiform Minerals Map.

The County EMD has developed a prescriptive standard for Fugitive Dust Prevention and Control Plans and Contingent Asbestos Hazard Dust Mitigation Plans pursuant to Ordinance No. 4548. The intent of the prescriptive standard is to ensure that adequate dust control and asbestos hazard mitigation measures are implemented during project construction. The standard applies to all applications for dwelling, grading, or construction permits(s) through the County Building Department; compliance is required before groundbreaking. This standard does not apply to agricultural operations. Section 2 of the prescriptive standard, dealing with asbestos hazard dust mitigation, is implemented only in the event that asbestiform-containing soils are suspected or identified on the project site.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

The analysis of asbestos-related impacts is based on a report and mapping developed by the CGS, which represents the best available information on the presence of asbestos in El Dorado County. Geographic Information Systems (GIS) were used to overlay each respective land use map on the asbestos mapping to determine the approximate extent (in acres) of each land use designation that is potentially affected by naturally occurring asbestos. The alternatives were then evaluated based primarily on the quantity of designated residential land uses that are potentially affected by naturally occurring asbestos. Residential uses were selected as the best indicator of potential impacts because future residents would be subjected to the greatest postconstruction exposure risk. Residential land uses generally do not result in completely impervious land area as is the case in many nonresidential developments. In addition, people spend considerable amounts of time in their homes and yards, the latter having the potential to disturb asbestos-containing formations through earthwork activities (e.g., grading operations to create flat areas for pools, gardens, patios, etc.). For these reasons, residential uses are believed to result in a potentially higher exposure level than nonresidential land uses. Nonresidential development (i.e., Commercial, Industrial, Public Facilities, and Research and Development) was also considered in the context of construction impacts, as opposed to postconstruction impacts because these developments often result in full coverage of a project site with buildings, parking, access roads, etc., which would cover any naturally occurring asbestos on the site. None of the four project alternatives contain asbestos-related policies, and thus, there is no consideration of policies in the impact analysis.

Thresholds of Significance

The General Plan would result in a significant impact if development would result in the exposure of the public to naturally occurring asbestos.

Impact **5.8-9**

Public Exposure to Asbestos. Implementation of any of the four equal-weight alternatives would allow development to occur in areas that are characterized as likely to contain naturally occurring asbestos. Because no safe asbestos exposure has been established for residential areas, public exposure to any amount of asbestos poses a potential health risk. The alternatives vary in terms of the amount of residential uses designated in areas likely to contain asbestos. The 1996 General Plan alternative has the highest quantity of residential land designated in such areas, followed by the Roadway Constrained 6-Lane "Plus" Alternative, Environmentally Constrained Alternative, and the No Project Alternative. This impact is considered **significant** for all four equal-weight alternatives. Impact significance before and after mitigation is shown in the table below.

Impact	Significance Before Mitigation*							
	Alt. #1 (No Project)		Alt. #2 (Roadway Constrained 6-Lane "Plus")		Alt. #3 (Environmentally Constrained)		Alt. #4 (1996 General Plan)	
	2025	Buildout	2025	Buildout	2025	Buildout	2025	Buildout
5.8-9: Public Exposure to Asbestos	S_4	S_4	S_2	S_2	S_3	S_3	S_1	S_1
Mitigation	**Significance After Mitigation***							
	Alt. #1 (No Project)		Alt. #2 (Roadway Constrained 6-Lane "Plus")		Alt. #3 (Environmentally Constrained)		Alt. #4 (1996 General Plan)	
	2025	Buildout	2025	Buildout	2025	Buildout	2025	Buildout
5.8-9(a), Implement Mitigation Measure 5.1-3(a); 5.8-9(b), Strengthen Naturally Occurring Asbestos and Dust Protection Standards; 5.8-9(c), Provide Disclosure of Naturally Occurring Asbestos on Properties; and 5.8-9(d), Conduct Annual Reporting Regarding Asbestos	LS	LS	LS	LS	LS	LS	LS	LS

* Notes: LS = Less than Significant; N/A= Not Applicable; S = Significant; SU = Significant and Unavoidable. Significant impacts are ranked against each other by alternative for the 2025 scenario and the buildout scenario, from 1 (Worst Impact) to 4 (Least Impact). Where the impact under two different alternatives during the same time frame would be roughly equal in severity, the numerical ranking is the same.

Environmental Impacts Common to All Equal-Weight Alternatives

The analysis of asbestos-related impacts is based on asbestos mapping developed by the DOC. Table 5.8-9 illustrates the approximate extent (in acres) of each land use designation that is potentially affected by naturally occurring asbestos across the four equal-weight alternatives. The subsequent impact analysis focuses on those land use designations that provide for residential development.

Using data presented in Table 5.8-9, Table 5.8-10 provides estimates of the number of acres in residential and nonresidential (i.e., Commercial, Industrial, Public Facilities, and Research and Development) land uses that would be developed in areas likely to contain naturally occurring asbestos through 2025 and buildout. These estimates are based on the land use development forecasts developed for the General Plan process (please refer to Chapter 4, Land Use Forecasts and Development Estimates, in this EIR).

No Project Alternative (Alternative #1)

Relevant Goals/Policies—No Project Alternative

No policies are applicable.

No Project Alternative (2025)—Impact Discussion

Based on existing and projected development patterns, there is the potential for public exposure to naturally occurring asbestos found on the west slope of the county under the No Project Alternative. State and federal health officials consider all types of asbestos to be hazardous, and it is classified as a known human carcinogen by state, federal, and international agencies. Public exposure to asbestos resulting from implementation of any of the General Plan alternatives would be considered a significant public health impact.

Table 5.8-10 shows that based on the No Project Alternative land use map, approximately 10,764 acres of land designated for development of residential uses are located in areas characterized as likely to contain naturally occurring asbestos. Because this figure is based on the 1996 General Plan land use map, it depicts theoretical buildout conditions without limitations imposed by the Writ. Considerably less development is expected to occur through the planning horizon (2025) and buildout under the No Project Alternative, which is subject to Writ constraints on residential development.

Table 5.8-9
Area of Land Use Designations Potentially Affected by Asbestos (in acres)

Land Use Designation	No Project Alternative [1]	Roadway Constrained 6-Lane "Plus" Alternative	Environmentally Constrained Alternative	1996 General Plan Alternative
Residential Land Uses				
AP (Adopted Plan)	345	338	338	345
HDR (High-Density Residential)	420	269	330	420
LDR (Low-Density Residential)	8,952	5,942	4,209	8,952
MDR (Medium-Density Residential)	1,230	563	615	1,230
MFR (Multi-Family Residential)	81	78	94	81
RR (Rural Residential)	14,180	0	0	14,180
RRL (Rural Residential Low)	0	0	0	0
RL (Rural Land)	0	8,770	8,698	0
Sub-Total (Residential)	***25,208***	***15,960***	***14,284***	***25,208***
Job-Generating Land Uses				
C (Commercial)	225	190	131	225
I (Industrial)	178	171	0	178
PF (Public Facilities)	186	185	189	186
RD (Research &Development)	7	7	0	7
Sub-Total (Job-Generating)	***596***	***553***	***320***	***596***
Other Land Uses				
A (Agriculture)	0	0	3,342	0
NR (Natural Resources)	3,447	12,564	11,020	3,447
OS (Open Space)	3,312	3,194	3,324	3,312
TR (Tourist Recreational)	43	43	33	43
Unassigned	0	292[3]	284[3]	0
TOTAL (All designations) [2]	**32,605**	**32,605**	**32,605**	**32,605**

[1] The No Project Alternative is subject to the restrictions in the Writ, and thus is not expected to result in the same quantity of residential uses as the 1996 General Plan Alternative. See impact analysis for further information.

[2] Totals may not add due to rounding

[3] Road rights of way

Source: Department of Conservation 2000, El Dorado County 2002, EDAW 2003

Table 5.8-10
Area of Residential and Job-Generating Land Uses Projected to be Developed in Areas Likely to Contain Naturally Occurring Asbestos (in acres)[1]

Period	Forecasted Units or Jobs in Market Areas Containing Asbestos[3,4]	Percentage[6]	Area of Land Use Designations Potentially Affected by Asbestos[7]	Area Potentially Developed[8]
RESIDENTIAL USES[2]				
No Project Alternative				
2025	17,781 / 50,590[5]	35.1%	25,208	8,848
Buildout	21,596 / 50,590[5]	42.7%	25,208	10,764
Roadway Constrained 6 Lane "Plus" Alternative				
2025	21,011 / 28,249	74.4%	15,960	11,874
Buildout	28,249 / 28,249	100%	15,960	15,960
Environmentally Constrained Alternative				
2025	25,396 / 39,087	65%	14,284	9,285
Buildout	39,087 / 39,087	100%	14,284	14,284
1996 General Plan Alternative				
2025	24,978 / 50,590	49.4%	25,208	12,453
Buildout	50,590 / 50,590	100%	25,208	25,208
JOB-GENERATING USES[2]				
No Project Alternative				
2025	29,647 / 68,796[5]	43.1%	596	257
Buildout	67,526 / 68,796[5]	98.2%	596	585
Roadway Constrained 6 Lane "Plus" Alternative				
2025	28,649 / 68,796	41.6%	553	230
Buildout	68,796 / 68,796	100%	553	553
Environmentally Constrained Alternative				
2025	34,163 / 53,501	63.9%	320	204
Buildout	53,501 / 53,501	100%	320	320
1996 General Plan Alternative				
2025	33,236 / 68,796	48.3%	596	288
Buildout	68,796 / 68,796	100%	596	596

Table 5.8-10
Area of Residential and Job-Generating Land Uses Projected to be Developed in Areas Likely to Contain Naturally Occurring Asbestos (in acres)[1]

[1] Represents estimates only; based on proportion of projected development expected to occur in market areas with high asbestos content (see Chapter 4, Table 4-5). Includes Market Area 1, 2, 5, 8, 10, and 11.
[2] Residential land uses include AP, HDR, LDR, MDR, MFR, RR, RRL, and RL; job generating land uses include: C, I, PF, and RD
[3] Numerator = total of projected change for 2025 for Market Areas 1, 2, 5, 8, 10, and 11 from Table 4-5 (for residential) and Table 4-6 (for nonresidential)
[4] Denominator = total of projected change for buildout for Market Areas 1, 2, 5, 8, 10, and 11 from Table 4-5 (for residential) and Table 4-6 (for nonresidential). All buildout numbers include development through 2025.
[5] 1996 General Plan buildout used to reflect buildout of land map for the No Project Alternative.
[6] "a" divided by "b" from column 2.
[7] Subtotals from Table 5.8-9
[8] Column 4 (area) multiplied by column 3 (percentage)

Source: California Department of Conservation 2000; EPS 2002a, 2002b, 2002c, 2002d; El Dorado County 2002; EDAW 2003

Approximately 17,781 new dwelling units (83% of the total projected residential development reflected in Chapter 4, Table 4-5) are expected to be developed in the six market areas (Nos. 1, 2, 5, 8, 10, and 11) that contain 96% of the naturally occurring asbestos found in El Dorado County (see Table 5.8-8). The number of new dwelling units projected in these six market areas through 2025 is roughly 35.1% of the total number units that could be developed if no Writ restrictions were in effect. Based on this percentage, it is estimated that approximately 8,848 acres (out of 25,208 acres) of land designated for residential uses in areas likely to contain naturally occurring asbestos would be developed through 2025 under the No Project Alternative.

Nonresidential development could also generate asbestos exposure impacts, particularly during construction activities. Using the same methodology as described above for residential uses, substituting projected job growth through 2025 and buildout, Table 5.8-10 shows that approximately 257 acres of Commercial, Industrial, Public Facilities, and Research and Development land uses would be developed in areas considered likely to contain naturally occurring asbestos under the No Project Alternative at 2025.

There are no policies associated with the No Project Alternative that address the issue of asbestos; however, there are statewide and county regulations/procedures that address this issue. County Ordinance requires that a Fugitive Dust Prevention and Control Plan and Contingent Asbestos Hazard Dust Mitigation Plan be prepared for all new construction activities necessitating a building or grading permit.

The Fugitive Dust Prevention and Control Plan and Contingent Asbestos Hazard Dust Mitigation Plan must be approved by the County EMD at the time of the preconstruction meeting required for of all private development projects. The EMD, at its discretion, may place conditions and/or requirements on the plan in accordance with its rules and County Ordinance. However, the Contingent Asbestos Hazard Dust Mitigation Plan component is implemented only in the event that asbestos formations are observed or suspected at the project site. It is the responsibility of the construction managers and/or private landowners to make this determination, which may be difficult without a soils/geotechnical report or prior geologic-related experience. A soils/geotechnical report is required for all commercial and subdivision projects, but not necessarily for non-discretionary residential developments. With the exception of existing commitments, the only residential development permitted under the Writ is nondiscretionary. As a result, there is the potential for naturally occurring asbestos to be present at a residential building sites without the implementation of the protective measures included in the Contingent Asbestos Hazard Dust Mitigation Plan. Because there are no mechanisms in place to ensure that the presence of asbestos is detected at all construction sites, there is the potential for public exposure to asbestos during construction activities.

The use of asbestos-containing materials in the development of new unpaved roads can also potentially result in public exposure to asbestos. However, asbestos regulations for surfacing applications, as enacted by CARB, prohibit the sale or use of restricted material for unpaved surfacing unless it has been tested and found to have an asbestos content that is less than 0.25%. This regulation is intended to minimize the risk of public exposure to asbestos for new unpaved roads.

In addition to construction-related impacts, there also exists the potential for public exposure to asbestos during day-to-day activities. Existing and new residents living in areas considered likely to contain asbestos could be exposed to asbestos during common earthwork activities (e.g., landscaping). In addition, residents living in proximity to unpaved roads that were surfaced with road base containing naturally occurring asbestos before the development of the Air Toxic Control Measure (ATCM) addressing surfacing applications may also be potentially exposed to asbestos. There are no policies and/or regulations in effect presently that address these post-construction impacts.

Because there is the potential for public exposure to asbestos associated with new construction and day-to-day activities, and no policies and/or regulations associated with the No Project Alternative are in place to address these issues, this impact is considered significant.

No Project Alternative (Buildout)—Impact Discussion

Similar to the 2025 scenario, there is the potential to expose residents living in both existing and new development to naturally occurring asbestos through buildout of the General Plan. As indicated above, Table 5.8-10 shows that the No Project Alternative would allow residential development on 25,208 acres of land likely to contain naturally occurring asbestos; this entire area could potentially develop through buildout, but development would be limited due to the conditions of the Writ. Approximately 21,596 new dwelling units could be developed in the six market areas containing the majority of naturally occurring asbestos through buildout, which is roughly 42.7% of the total number units that could be developed through buildout if no Writ restrictions were in effect. Based on this percentage, it is estimated that approximately 10,764 acres (out of 25,208 acres) of land designated for residential uses in areas likely to contain naturally occurring asbestos would be developed through buildout. Although the No Project Alternative has the most residential land area subject to asbestos according to the land use map (same as the 1996 General Plan Alternative), due to Writ constraints, it is expected to result in the least amount of residential development potentially affected by asbestos among the four equal-weight alternatives. In addition, approximately 585 acres of Commercial, Industrial, Public Facilities, and Research and Development land uses could be developed in areas considered likely to contain naturally occurring asbestos under this alternative through buildout.

There are no policies or ordinances/regulations that would fully address asbestos issues at buildout (please refer to No Project Alternative (2025)—Impact Discussion above). Based on the quantity of residential development potentially affected by asbestos at buildout, impacts associated with public exposure to asbestos would be more severe relative to 2025 conditions. This impact is considered significant.

Roadway Constrained 6-Lane "Plus" Alternative (Alternative #2)

Relevant Goals/Policies—Roadway Constrained 6-Lane "Plus" Alternative

No policies are applicable.

Roadway Constrained 6-Lane "Plus" Alternative (2025)—Impact Discussion

The Roadway Constrained 6-Lane "Plus" Alternative would also potentially expose existing and new residents of El Dorado County to naturally occurring asbestos. Table 5.8-10 shows that under this alternative, approximately 15,960 acres of land designated for residential uses are located in areas characterized as likely containing naturally occurring asbestos; however,

not all of this land area is expected to develop through the planning horizon (2025). Development is expected to be concentrated in the western-most market areas, corresponding closely to market areas likely to contain naturally occurring asbestos. Approximately 21,011 new dwelling units are projected to be developed in the six market areas considered high in terms of asbestos content. The number of new dwelling units in these six market areas through 2025 is roughly 74.4% of the number under buildout conditions. Based on this percentage, it is estimated that approximately 11,874 acres (out of 15,960 acres) of land designated for residential uses in areas likely to contain naturally occurring asbestos would be developed through 2025.

Nonresidential development could also generate asbestos exposure impacts, particularly during construction activities. It is estimated that approximately 230 acres of Commercial, Industrial, Public Facilities, and Research and Development land uses would be developed in areas considered likely to contain naturally occurring asbestos under the Roadway Constrained 6-Lane "Plus" Alternative at 2025.

There are no policies or ordinances/regulations that would fully address asbestos issues associated with construction or day-to-day activities (please refer to No Project Alternative (2025)—Impact Discussion above). Therefore, this impact is considered significant.

Roadway Constrained 6-Lane "Plus" Alternative (Buildout)—Impact Discussion

At buildout, the Roadway Constrained 6-Lane "Plus" Alternative would continue to expose existing and new development to naturally occurring asbestos. Similar to the 2025 scenario, Table 5.8-10 estimates that this alternative allows residential development through buildout on 15,960 acres of land considered likely to contain naturally occurring asbestos. However, the projected development intensity would be greater at buildout, with up to approximately 28,249 units developed in the six market areas containing most of the asbestos soils. At buildout, all 15,960 acres of land designated for residential uses in areas likely to contain naturally occurring asbestos could be developed. In addition, approximately 553 acres of Commercial, Industrial, Public Facilities, and Research and Development land uses could be developed in areas considered likely to contain naturally occurring asbestos under this alternative through buildout.

There are no policies or ordinances/regulations that would fully address asbestos issues at buildout (please refer to No Project Alternative (2025)—Impact Discussion above). Based on the quantity of residential development potentially affected by asbestos at buildout, impacts associated with public exposure to asbestos would be more severe relative to 2025 conditions. This impact is considered significant.

Environmentally Constrained Alternative (Alternative #3)

Relevant Goals/Policies—Environmentally Constrained Alternative

No policies are applicable.

Environmentally Constrained Alternative (2025)—Impact Discussion

Under the Environmentally Constrained Alternative, Table 5.8-10 roughly 14,284 acres of land designated for residential uses are located in areas likely to contain asbestos. This figure represents theoretical buildout conditions, and is not expected to completely develop through 2025. Although the quantity of residential land subject to asbestos is the lowest under this alternative, it is characterized by the second highest rate of forecasted residential development. Approximately 25,396 new dwelling units are projected to be developed in the six market areas with potentially high asbestos content. The number of new dwelling units in these six market areas through 2025 is roughly 65% of the number under buildout conditions. Based on this percentage, it is estimated that approximately 9,285 acres (out of 14,284 acres) of land designated for residential uses in areas likely to contain naturally occurring asbestos would be developed through 2025.

In terms of nonresidential development that could also generate asbestos exposure impacts, it is estimated that approximately 204 acres of Commercial, Industrial, Public Facilities, and Research and Development land uses would be developed in areas considered likely to contain naturally occurring asbestos under the Environmentally Constrained Alternative at 2025; this is the lowest of the four equal-weight alternatives.

There are no policies or ordinances/regulations that would fully address asbestos issues associated with construction or day-to-day activities (please refer to No Project Alternative (2025)—Impact Discussion above). Therefore, this impact is considered significant.

Environmentally Constrained Alternative (Buildout)—Impact Discussion

Implementation of the Environmentally Constrained Alternative could accommodate additional development in areas containing naturally occurring asbestos through buildout. In total, this alternative could accommodate 39,087 units in the six market areas with the highest asbestos content. At buildout, all 14,284 acres of land designated for residential uses in areas likely to contain naturally occurring asbestos could be developed. In addition, approximately 320 acres of Commercial, Industrial, Public Facilities, and Research and Development land uses could be developed in areas considered likely to contain naturally occurring asbestos

under this alternative through buildout; this is considerably less than under any of the other equal-weight alternatives.

There are no policies or ordinances/regulations that would fully address asbestos issues at buildout (please refer to No Project Alternative (2025)—Impact Discussion above). Based on the quantity of residential development potentially affected by asbestos at buildout, impacts associated with public exposure to asbestos would be more severe relative to 2025 conditions. This impact is considered significant.

1996 General Plan Alternative (Alternative #4)

Relevant Goals/Policies—1996 General Plan Alternative

No policies are applicable.

1996 General Plan Alternative (2025)—Impact Discussion

There is the potential to expose existing and new residents to naturally occurring asbestos under the 1996 General Plan Alternative. As is the case under the No Project Alternative, Table 5.8-10 reflects that the land use map includes approximately 25,208 acres of designated residential uses in areas characterized as likely to contain naturally occurring asbestos. Unlike the No Project Alternative, however, this alternative is not subject to Writ constraints, and thus could result in higher development densities through 2025. Residential development in areas likely to contain naturally occurring asbestos is the highest under this alternative, with roughly 24,978 new dwelling units expected to be developed in the six market areas that contain the majority of naturally occurring asbestos. This number of new dwelling units in these six market areas through 2025 is roughly 49.4% of the number under buildout conditions. Based on this percentage, it is estimated that approximately 12,453 acres (out of 25,208 acres) of land designated for residential uses in areas likely to contain naturally occurring asbestos would be developed through 2025.

This alternative may also result in asbestos-related impacts during construction activities associated with certain nonresidential development. It is estimated that approximately 288 acres of Commercial, Industrial, Public Facilities, and Research and Development land uses would be developed in areas considered likely to contain naturally occurring asbestos under the 1996 General Plan Alternative at 2025; this is the highest amount of the four equal-weight alternatives.

There are no policies or ordinances/regulations that would fully address asbestos issues associated with construction or day-to-day activities (please refer to No Project Alternative (2025)—Impact Discussion above). Therefore, this impact is considered significant.

1996 General Plan Alternative (Buildout)—Impact Discussion

At buildout, this alternative would continue to allow residential development on land characterized by asbestos-containing soils. Approximately 50,590 new dwelling units could be accommodated in the six market areas most likely to contain naturally occurring asbestos. At buildout, all 25,208 acres of land designated for residential uses in areas likely to contain naturally occurring asbestos could be developed. In addition, approximately 596 acres of Commercial, Industrial, Public Facilities, and Research and Development land uses could be developed in areas considered likely to contain naturally occurring asbestos under this alternative through buildout.

There are no policies or ordinances/regulations that would fully address asbestos issues at buildout (please refer to No Project Alternative (2025)—Impact Discussion above). Based on the quantity of residential development potentially affected by asbestos at buildout, impacts associated with public exposure to asbestos would be more severe relative to 2025 conditions. This impact is considered significant.

Mitigation Measure 5.8-9—No Project Alternative

The County shall implement all of the following measures:

- Mitigation Measure 5.8-9(a): Implement Mitigation Measure 5.1-3(a)
- Mitigation Measure 5.8-9(b): Strengthen Naturally Occurring Asbestos and Dust Protection Standards
- Mitigation Measure 5.8-9(c): Provide Disclosure of Naturally Occurring Asbestos on Properties
- Mitigation Measure 5.8-9(d): Conduct Annual Reporting Regarding Asbestos

These mitigation measures are described below.

Mitigation Measure 5.8-9(a): <u>Implement Mitigation Measure 5.1-3(a)</u>

The County shall implement Mitigation Measure 5.1-3(a) described in Section 5.1, Land Use and Housing.

Mitigation Measure 5.8-9(b): <u>Strengthen Naturally Occurring Asbestos and Dust Protection Standards</u>

The County shall implement the following supplemental policy and implementation measure:

> **New Policy:** The County shall require that all projects requiring grading permit, or a building permit that would result in earth disturbance, that are located in areas likely to contain naturally occurring asbestos (based on mapping developed by the DOC) have a California- registered geologist knowledgeable about asbestos-containing formations inspect the project area for the presence of asbestos using appropriate test methods.

Projects that meet this criteria would be identified through the General Plan conformity review process described in Mitigation Measure 5.1-3(a).

> **New Implementation Measure:** Amend prescriptive standard for the Fugitive Dust Prevention and Control Plan and Contingent Asbestos Hazard Dust Mitigation Plan.

Mitigation Measure 5.8-9(c): <u>Provide Disclosure of Naturally Occurring Asbestos on Properties</u>

The County shall implement the following new policy:

> **New Policy:** The County shall establish a property deed notification program, where potential buyers of real property in all areas likely to contain naturally occurring asbestos (based on mapping developed by the DOC) are provided information regarding the potential presence of asbestos on properties subject to sale. Information shall include potential for exposure from access roads and from disturbance activities (e.g., landscaping). Disclosure of the potential for asbestos must be placed on the deed and notification provided through title.
>
> **New Implementation Measure:** The County shall adopt a Naturally Occurring Asbestos Disclosure Ordinance that includes the provisions in the policy described in Mitigation Measure 5.8-9(c).

Mitigation Measure 5.8-9(d): Conduct Annual Reporting Regarding Asbestos

This mitigation measure consists of the following supplemental policy:

> **New Policy:** The County Environmental Management Department (EMD) shall report annually to the Board of Supervisors regarding new information regarding asbestos and design an information outreach program.

Mitigation Measure—Roadway Constrained 6-Lane "Plus" Alternative

Please refer to the proposed mitigation measures for the No Project Alternative above. With implementation of these mitigation measures, impacts would be reduced to a less-than-significant level because asbestos would be controlled during construction and property owners would be notified of potential presence of asbestos and means to avoid exposure.

Mitigation Measure—Environmentally Constrained Alternative

Please refer to the proposed mitigation measures for the No Project Alternative above. With implementation of these mitigation measures, impacts would be reduced to a less-than-significant level.

Mitigation Measure—1996 General Plan Alternative

Please refer to the proposed mitigation measures for the No Project Alternative above. With implementation of these mitigation measures, impacts would be reduced to a less-than-significant level.

5.8.5 WILDLAND FIRE HAZARDS

EXISTING CONDITIONS

Physical Environment

Wildland fire is a major hazard in the State of California, particularly in the foothill areas. Wildland fires have caused major resource damage in the county, requiring large investments in burn site rehabilitation. Wildland fires burn natural vegetation on developed and undeveloped lands and include timber, brush, woodland, and grass fires. While low-intensity wildland fires have a role in the county's ecosystem, wildland fires put human health and

safety, structures (e.g., homes, schools, businesses, etc.), air quality, recreation areas, water quality, wildlife habitat and ecosystem health, and forest resources at risk.

Historic Fires

Exhibit 5.8-3 shows the locations of fires that have occurred in El Dorado County between 1915 and 2001. The map shows that large areas of the county have been burned by large fires. Most of the burned areas located on the west slope of El Dorado County have occurred on wildlands or in rural areas near wildlands. According to the California Department of Forestry and Fire Protection (CDF), 300 fires occur in the county every year on average, and 95% of them are started by human activities.

The National Fire Management Analytic System (NFMAS) reported that Eldorado National Forest, a portion of which is located with El Dorado County, averages 87 fires per year, with 2,094 acres burned per year over the last 64 years. However, in recent years, the number of fire incidents has increased to an annual average of 117 fires per year with 2,735 acres burned per year. The increase has been attributed to more human-caused fires, heavier fuel loading caused by fire exclusion practices, and better documentation of fire incidents. Eldorado National Forest is heavily visited because of its proximity to urban populations. As a result of this high level of human activity, over 56% of wildland fires in the Eldorado National Forest are human-caused, and these fires account for 93% of the acreage burned in the forest (Patton 2002).

Direct Causes

Wildland fire may be started by natural processes, primarily lightning, or it may be started by human activities, both intentionally and accidentally. Where there is human access into wildland areas, the risk of fire increases. Human activities, such as smoking, debris burning, and equipment operation are the major causes of wildland fires. According to the CDF, more than 90% of wildland fires within CDF's jurisdiction are started by people while less than 10% are started by lightning (CDF 2002).

Hazard Potential

The long, hot, dry summers in El Dorado County, combined with poor road access, inadequate clearance between structures and vegetation, flammable vegetation, and steep topography, result in severe wildfire conditions every year. Several factors related to the frequency (i.e., occurrences per year), intensity (i.e., temperature of fire), and extent (i.e., burned acreage) of wildland fires are discussed below.

Weather

Weather patterns during the summer, fall, and early winter months provide conditions that are conducive to wildland fires. The weather during the summer and fall months is generally hot and dry but subject to frequent cooler weather conditions. Marine air often moves into the county from the west, dropping temperatures, raising relative humidity, and generally reducing the fire danger temporarily without any long-term effects.

During the fall and early winter months, the county experiences foehn or "Mono" winds from the east or northeast caused by compressional heating. While these winds are blowing, a spark in vegetated areas has major fire potential. The first winter-type storm usually occurs in October, and it reduces the fire danger significantly. Long, hot, and dry summers with temperatures often exceeding 100°F add to the county's fire hazard, making wildland areas more susceptible to fires from human activity and/or lightning.

Topography

Topography is a central factor when considering the fire hazard of an area. For example, as slopes increase, fires spread faster. In the steep and heavily vegetated ravines that are prevalent throughout the county, fire spreads rapidly and creates a "chimney effect," in which drafts of hot air and gases blow upward from ravines, resulting in sudden flashes of fire. Steep terrain also restricts accessibility to wildland fires by fire suppression crews and thus allows wildland fires to spread into additional areas.

Fire-Prone Vegetation

The quantity and type of vegetative fuel determine the intensity of a wildland fire. Vegetative characteristics in El Dorado County range from light grasslands in the southern portion to heavy timber in the east. Between these two diverse types of vegetative communities are varieties of brush and woodland.

CDF classifies types of fuel loads into three categories:

- **Light (Grass).** Areas dominated by grasses, annual herbs, and barren land. This is the lightest fuel load; it burns easily, but is the easiest to control.
- **Medium (Shrub).** Areas dominated by brush, shrubs, and other perennial vegetation less than 6 feet in height (0-10 year age class).

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< **Heavy (Woods - Brushwood).** Areas in which vegetation 6 feet or more in height is dominant. This is the hardest vegetative type to ignite; but, because of the heavy fuel load, is the most difficult to control once burning commences.

Forest management practices, particularly fire suppression activities and the restriction on timber harvest, have resulted in dense, second growth timber mixed with brush and slash, which is the logs, chips, bark, branches, stumps and broken understory trees or brush left at the site after logging, pruning, thinning or brush cutting. This condition results in dangerous fire conditions. For example, the presence of fire-prone vegetation at various elevations allows fires to migrate to tree crowns, where fires may persist due to the lack of access by fire suppression crews.

The decades-old practice of fire suppression and a lack of controlled fires contribute to heavy accumulations of dead and downed fuels. Provisions for the disposal of slash have been incorporated into timber sale contracts for the past few decades, but even with such provisions, the slash often sits for a summer prior to treatment, resulting in a fire-conducive condition. Dead and downed fuels that result from natural causes are typically left untreated.

As the development density at urban/wildland interface areas increases, the amount of fire suppression activities would also be expected to increase. Without fuel reduction activities, the increase in fire suppression activities may increase the accumulation of dead fuels in areas that were prevented from being burned by wildland fires. However, more acres of land in interface areas would likely be burned as a result of the increase in the frequency of fire incidents associated with population growth. Overall, it is uncertain if increased fire suppression activities would result in an increase in fuel loading.

The conversion of land used for grazing to other land uses may also increase fuel loading. For example, farm animals are often removed from sites proposed for residential development. Following cessation or grading but before development begins, the growth of brush, shrub, and other perennial vegetation increases onsite fuel loading (Evans, pers comm., 2003).

Other fuel modification problems exist in those areas where considerable investment has been made in tree plantations. Plantations of young trees provide heavy, continuous fuels. The Ice House burn of 1959 is an example where solid windrows of slash existed throughout stands of young trees, creating a highly flammable and unmanageable situation. Portions of the more recent Cleveland Fire burned similar fuels as those replanted after the Ice House burn.

Currently, CDF administers a fuel reduction program called the Vegetation Management Program. This program reduces the fuel loading in portions of the county by prescribed

burning in order to reduce the intensity of wildland fires. The El Dorado County Resource Conservation District also implements a fuel reduction program. These programs are further discussed below.

Development Pattern

Structures in rural and wildland areas provide added fuel for wildland fires. This is particularly acute in the urban/wildland interface. While there is no single definition of the interface, the USFS defines development of densities of one unit/five acres or greater adjacent to fire fuel sources as generally within this interface, although they also look at development densities as low as one unit/40 acres as an indication of potential concern (Rodman, pers. comm., 2003). Allowing substantial population growth into the severe and high fire hazard areas increases the risk of igniting a fire, increases the exposure of persons and property to wildland fires, and compounds the difficulty of the wildland firefighting effort because of access, water, and equipment constraints. Development of structures in wildland areas may redirect the firefighting efforts to protecting and saving structures at the expense of nondeveloped wildlands, which may support important natural resources.

Wildland Fire Management

The purpose of wildland fire management efforts is to reduce the damage potential of wildland fires. In general, wildland fires that occur near timber production areas and/or near low-density developments that are not compliant with fire safe regulations have the greatest potential for the damage and destruction of natural and manmade resources. The cost of the damage tends to increase as the frequency, intensity, and extent of wildland fire increases. While discussion of damage potential tends to be focused on the quantity and value of homes and timber, wildland fire also affects wildlife and natural habitats in the County.

Wildland fire management activities may be divided into three categories: fire prevention, fuel management, and fire suppression.

Fire Prevention

Preventive measures are designed to minimize the occurrence of and damage caused by wildland fires. Because natural causes of wildland fires (primarily lightening) cannot be controlled, the emphasis is placed on prohibiting and minimizing human activities that directly cause wildland fires. Despite legal prohibitions, many wildland fires start unintentionally as a result of automobile traffic, equipment use, smoking, and outdoor recreation activities. In order to minimize the fire-causing potential of legal activities, federal, state, and local agencies

have implemented a variety of measures, including education, signage, patrol, and enforcement (Sapsis 2003). Locally, fire safe councils, which are described below, are active in fire prevention activities.

Fuel Management

The purpose of fuel management activities is to alter the fuel characteristics (e.g., quantity and continuity) such that the intensity and extent of wildland fire would be reduced. If successful, fuel management results in prevention of or reduced damage caused by wildland fire. Fuel management also makes it easier to contain wildland fire so that fewer resources are exposed to fire hazards. Specific fuel management activities include the removal of slash, mid-elevation vegetation, and vegetation around structures, as well as the creation of fuel breaks, which are strategically placed strips of low volume fuel designed to provide attack points and safe access (CDF 2003).

Fire Suppression

Fire suppression involves all the work of extinguishing or containing a fire, beginning with its discovery. Federal, state, and local agencies respond to wildland fire incidents. These agencies are described later in this subsection.

The efficiency of fire suppression activities in developed fire-prone areas depends on several factors; these factors are described below.

Provision of Access

The type of access to a fire dictates the available suppression techniques and is a major consideration in fire suppression effort. Inadequate access (e.g., streets narrower than the Design Manual would allow streets and homes without identification) complicated by evacuating residents, was a primary factor for the destructive nature of the Forty-Niner Fire in Nevada County in 1988; more than 33,000 acres and 150 homes were destroyed, with the resulting damage exceeding 30 million dollars (Walt 1988). Similarly, the majority of structures burned in the Cleveland Fire were lost due to inadequate bridges across the American River that were unable to support the weight of fire trucks.

Steep slopes have a major influence on the location and design of roads. Additionally, dead-end roads without the benefit of loop circulation systems predominate in the County. This presents an extremely dangerous situation when coupled with the substandard width of

many public and private roads. Additionally, driveway access from these roads to structures is generally substandard (e.g., narrow, steep grades).

The lack of access to gated subdivisions has on occasion been an impediment to fire fighting efforts in the county. Fire districts require the installation of a Knox key switch, which allows emergency personnel to access all gated subdivisions with one key. Fire districts may also require remote control codes or compatibility with 3M Opticom Priority Control System for remote entry systems to allow access during emergencies, and automatic gates are required to be connected to back-up batteries or be set to automatically be in the open position during power outages (Lacher, pers comm., 2003; Silva, pers comm. 2003; Russell, pers comm., 2003; Johnson, pers comm., 2003).

Since 1991, development in the county has been subject to a minimum 18-foot wide roadway access to all parcels. Dead-end roads are discouraged, but if proposed, turnarounds and maximum length limitations are required. Driveway standards now require a minimum ten-foot width with turnouts if the driveway is over 150 feet in length. Finally, fuel clearance standards apply to reduce fire intensity near roads.

Water Availability

The amount of water available is a key factor in successful suppression of wildland fires. Development in the service areas of water purveyors (see Exhibit 5.5-2) is required to demonstrate adequate water supply and pressure for both domestic needs and fire flows. This requirement may be met with fire hydrants in areas with pressurized, piped water systems. While this is a cost-effective approach in high density developments, the infrastructure costs associated with providing public water to less dense developments can be prohibitive and in some cases, not possible because base infrastructure does not exist. Typically, water availability requirements for rural housing units that depend on well water in the county are met by the availability of water tenders and other fire protection district equipment. Onsite water storage, such as swimming pools or water tanks, may also be required in rural areas for developments of multiple housing units.

Construction Materials

Building and fire codes dictate the types of construction materials that may be used. Fire-retarding roof materials and siding materials, as well as specific glass window types, may be required to reduce the potential for structural damage and the spread of fires to neighboring structures.

Regulatory/Planning Environment

Federal

National Fire Plan

The National Fire Plan, finalized in August 2001 by the Department of Interior and Department of Agriculture, outlines a coordinated national 10-year comprehensive strategy for the management of wildland fire, hazardous fuels, and ecosystem restoration and rehabilitation on federal and adjacent state, tribal, and private forest and range lands in the United States. This approach recognizes fire as part of the ecosystem; focuses on hazardous fuels reduction, integrated vegetation management, and firefighting strategies; and allocates and utilizes resources in a cost-effective manner over a long-term basis. An implementation plan of the National Fire Plan, completed in May 2002, designates general responsibilities for federal, state, and local agencies (National Fire Plan 2002).

A list of "Communities at Risk," which are urban wildland interface communities within the vicinity of federal lands that are high risk from wildfire, was developed in 2001. Communities at Risk within El Dorado County include French Hill (north of Greenwood), South Lake Tahoe, Georgetown, Cool, Spanish Flat (between Kelsey and Georgetown), Coloma, Big Meadow (south of Meyers), Pollock Pines, Union Hills (between Pollock Pines and Pacific House), Placerville, Diamond Springs, Cameron Park, Outingdale (near Somerset), Omo Ranch, Brownsville (south of Omo Ranch), and Latrobe (National Fire Plan 2002). The County recognizes that other communities not included on the National Fire Plan list may also be at risk of wildland fire.

National Forest Plans

Fire suppression programs in the National Forests are guided by various forest management plans. The USFS has two planning guides for the Eldorado National Forest that apply to the developed areas of the county that interface with the National Forest, the Eldorado Land and Resource Management Plan (1989) and the Sierra Nevada Forest Plan Amendment (SNFPA) (SNFPA 2000).

The SNFPA covers the 11 National Forests in the Sierra Nevada. Both plans provide guidance and are relevant except where they overlap, in which case the SNFPA has authority. In the case of fire suppression in the interface with development areas, the SNFPA contains policies for fuel management that override any policies in the resource management plan. The SNFPA identifies "urban intermix zones." These zones are areas abutting National Forest land

that have generally developed at a density of one unit per 5 acres or more dense, although parcels as large as 40 acres with homes on them are considered potential indicators of urban development, as defined by the USFS. Examples of urban intermix zones include Pollock Pines, Grizzly Flats, Volcano, and Kyburz. The SNFPA includes plans to reduce vegetative fuel loads on National Forests within one-quarter mile of development in the urban intermix zone. USFS staff is currently preparing a supplement to the SNFPA because its fuel reduction program relies on prescribed burning to reduce fuel loads, which USFS staff believed could not be implemented because of air quality concerns and adverse weather conditions that make prescribed burns too risky. The supplement will instead provide for mechanical reduction of fuel loads through selective logging and clearing of newer growth vegetation. (Rodman, pers. comm., 2003.)

State Regulations and Plans

California Fire Plan

The California Board of Forestry and the CDF have developed the California Fire Plan in an effort to reduce the overall costs and losses from wildfire in California. According to the California Fire Plan, the primary purpose of wildland fire protection in California is to protect the human health and safety together with the wide range of assets found on California wildlands. These assets include timber; range; recreation; water and watershed; plants; air quality; cultural and historic resources; unique scenic areas; buildings; and wildlife, plants, and ecosystem health (California Fire Plan 2003).

The California Fire Plan defines a standard for measuring the level of fire protection service provided in an area, considers assets at risk, incorporates the cooperative interdependent relationships of wildland fire protection providers, provides for public stakeholder involvement, and creates a fiscal framework for policy analysis. A key product of the California Fire Plan is the development of wildfire safety zones to reduce the risks to residents and firefighters from future large wildfires. The California Fire Plan defines an assessment process for measuring the level of service provided by the fire protection system for wildland fire. This measure can be used to assess the department's ability to provide an equal level of protection to sites with similar land types, as required by Public Resources Code Section 4130. This measure is the percentage of fires that are successfully controlled before unacceptable costs are incurred. Knowledge of level of service will help define the risk to wildfire damage faced by public and private assets in the wildlands (Fire Safe Council 20023).

California Public Resources Code

State Responsibility Area

The California Public Resources Code (PRC) requires the designation of State Responsible Areas (SRAs), which are identified based on cover, beneficial water uses, probable erosion damage and fire risks, and hazards. The financial responsibility of preventing and suppressing fires in the SRA is primarily the responsibility of the state. Exhibit 5.8-4 shows the SRAs, classified into fire hazard areas, within the county. As shown, the majority of the west slope is located within the SRA, with most of remaining land being located within the Eldorado National Forest. Fire protection in areas outside the SRA are the responsibilities of local or federal jurisdictions and are referred to as local responsibility areas and federal responsibility areas, respectively. Generally, when development density within a given SRA exceeds one dwelling unit per acre, the land is no longer classified as an SRA and becomes the responsibility of the local fire protection district (Smith 2003).

Fire Hazard Severity Classification System

As required by SB 81 (1981) and SB 1916 (1982), CDF has established a fire hazard severity classification system, which assesses the fire potential for wildland based on three factors: fuel load, climate, and topography. The classification system provides three classes of fire hazards: Moderate, High, and Very High. Many homes in the High and Very High fire hazards areas, as identified by the CDF, are considered to be without adequate protection from wildland or structural fires.

The degree of hazard in wildland areas depends on weather (temperature, moisture, wind), the amount of dryness and arrangement of vegetation, slope steepness, accessibility to human activities, accessibility of firefighting equipment, and fuel clearance around structures. A map of the fuel loading in the county is shown in the General Plan (see Figure HS-1). CDF's Fire Hazard Map integrates the combinations of fuel loading, vegetative types, topography, and access. Exhibit 5.8-4 shows the fire hazard severity classifications of the SRAs on the west slope of El Dorado County.

Defensible Space Requirements

In 1987, SB 1075 was adopted to require the California Board of Forestry to establish minimum fire safety standards that apply to the SRA. Subsequently, PRC Section 4290 required local jurisdictions to implement these fire safe standards. The County adopted these

standards in 1991, requiring the creation of defensible space around structures and roads within the county.

The concept of defensible space is the cornerstone of fire safe regulations. The intent is to reduce the intensity of a wildland fire by reducing the volume and density of fuels (e.g., vegetation that can transmit fire from the natural growth to a building or structure), to provide increased safety for fire equipment and evacuating civilians, and to provide a point of attack or defense from a wildland fire. Defensible space is characterized by the establishment and maintenance of emergency vehicle access, emergency water reserves, street names, building identification, and fuel modification measures. The basic recommendation is to provide a minimum of 30 feet fuel clearance from all structures and roads. To comply with the state's defensible space requirement, the local fire protection agencies require the following, at minimum:

- the clearance of 30-100 feet of flammable vegetation from around buildings; on steeper parcels, fire safe clearance requirements are determined by the local fire protection agency;
- the removal of branches from within 10 feet of a chimney; and
- the removal of all flammable vegetation from roof tops, including dry leaves and pine needles.

Vegetation Management Program

The CDF has a fuel reduction program called the Vegetation Management Program. Limited funding is available to conduct fuel management activities primarily by burning on parcels or aggregates of parcels of 100 acres or more. The objective of the Vegetation Management Program is to prevent high intensity wildfire through fuel modification. If brush can be kept at the medium fuel load level as described above, then the intensity of fire can be reduced substantially.

County Regulations and Plans

Fire Hazard Ordinance

Chapter 8.08 of the El Dorado County Code, also known as the County Fire Hazard Ordinance, requires defensible space as described by the PRC, including the incorporation and maintenance of a 30-foot fire break or clearing around structures. The County's requirements on emergency access, signing and numbering, and emergency water are more

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stringent than those required by state law (Patton 2002). The Fire Hazard Ordinance also establishes limits on campfires, fireworks, smoking, and incinerators. The Fire Hazard Ordinance is applicable to all developments in the county, including all discretionary and ministerial developments.

Real Property Fire Hazard Disclosure Ordinance

Chapter 8.10 of the County Code, also known as the Real Property Fire Hazard Disclosure Ordinance, requires sellers of property in wildfire risk area to inform prospective buyers about the wildfire hazards that may affect the property.

Uniform Fire Code

The County has adopted the 1988 Uniform Fire Code and Standards, as published by the International Conference of Building Officials (ICBO), in County Code Chapter 15.44. The Uniform Fire Code establishes standards for fire department access, fire hydrants, automatic sprinkler systems, fire alarm systems, fire and explosion hazards safety, hazardous materials storage and use, provisions intended to protect and assist first responders, industrial processes, and many other general and specialized fire-safety elements for new and existing buildings and premises (ICBO 2002).

Fire District Improvement Fee

Chapter 13.20 of the County Code establishes the Fire District Improvement Fee, which is paid by developers at the issuance of a building permit. The fee is used to finance public improvements and equipment for fire protection purposes. Each developer pays a fair share of the total cost of the improvements and equipment for the fire district within which the project occurs.

El Dorado County Multi-Hazard Functional Emergency Operations Plans

The El Dorado County Multi-Hazard Functional Emergency Operations Plans (MHFP) provide guidance and protocols for the County's response to extraordinary large-scale emergency situations, including wildland fire. Numerous local, state, and federal agencies, as well as private businesses and nonprofit organizations, would be involved in the response to wildland fires, including the local fire protection districts, CDF, U.S. Forest Service (USFS), and law enforcement agencies (EDCOES 1994).

Agencies and Organizations

Fire Protection Agencies

Fire protection services in El Dorado County are provided by 13 separate fire protection districts, one city fire department, the CDF, and the USFS. On the west slope, there are 10 fire protection districts, excluding the Placerville Volunteer Fire Department.

U.S. Forest Service

USFS is responsible for fire prevention and suppression in the Eldorado National Forest and those privately owned lands within the boundaries of the forest. USFS also provides mutual aid to CDF. USFS uses a variety of fire management techniques, including fuel loading management, fire hazard clearance from structures, and control of high-risk human activities (USFS 2002). These management activities are planned during the Land Management Plan and Forest Plan update processes (Patton 2003).

California Department of Forestry and Fire Protection

The Amador-El Dorado Unit of the CDF is responsible for providing the fire protection services to 413,000 acres of SRA land in the County. In fulfillment of the mutual aid agreement with the ten local fire districts and USFS, the CDF also responds to and abates uncontrolled fire that threatens to destroy life, property, or natural resources outside the SRA. CDF operates five state-owned fire stations near the communities of Camino, El Dorado, Pilot Hill, Garden Valley, and River Pines.

Local Fire Protection Districts

In addition to CDF and USFS, 10 local fire protection districts serve the west slope of the County. Three other fire protection districts serve the Lake Tahoe Basin. These fire protection agencies are further described in Section 5.7, Public Services, of this EIR document. The service areas of these local fire protection districts are shown in Exhibit 5.7-1. The fire protection districts that serve rural areas are primarily staffed by volunteer fire fighters. There are mutual aid agreements between most of the agencies to ensure that adequate manpower and equipment can be provided when a fire occurs. The local fire protection districts are responsible for structural fire and wildland fire. Response times for the local fire protection districts can be more than 20 minutes in rugged mountain areas.

El Dorado County Fire Safe Council

The State Fire Safe Council, an organization with both public agencies (e.g., CDF and USFS) and private organizations within its membership, was formed in 1993 for the purpose of protecting natural and manmade resources in California by making homes and communities fire safe. To this end, the Fire Safe Council has distributed fire prevention education materials to industry leaders and their constituents, evaluated legislation pertaining to fire safety, and empowered grassroots organizations to spearhead fire safety programs (FSC 2003).

Local fire safe councils are an outgrowth of the state council. The El Dorado County Fire Safe Council was formed in recent years to facilitate a countywide fire safety and prevention effort. In collaboration with the El Dorado County Fire Prevention Officer's Association, the El Dorado County Fire Safe Council has proposed to add defensible space and fire safe support infrastructure requirements and standards into the County's Design and Improvement Standards Manual as a part of a Fire Safe Plan being developed by the Fire Station Council. These requirements and standards would be particularly applicable to rural housing, which tend to have a larger interface with wildlands (Yorty 2002). The El Dorado Fire Safe Council anticipates applying for grants for fuel reduction programs on the west slope (Evans, pers comm., 2003). Another fire safe council is in development in the Lake Tahoe Basin.

El Dorado County Resource Conservation District

The El Dorado County Resource Conservation District, in conjunction with the Georgetown Resource Divide Conservation District, CDF, USFS, and other local agencies, performs fuel reduction and timber enhancement operations funded by the U.S. Department of Agriculture's Environmental Quality Incentives Program. These operations reduce the fuel loading on timber and agricultural lands. Owners of property benefiting from this program are required to maintain the low fuel loading on the properties for 10 years. In El Dorado County, approximately 300 acres a year are treated through this program. The El Dorado County Resource Conservation District expects the acreage treated per year will increase in the future (Evans, pers comm., 2003).

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Thresholds of Significance

Adoption of the General Plan would result in a significant impact if development would 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 5.8-10

Increased Potential for Fire Incidents and Fire Hazards. Development under all of the alternatives would increase the potential for wildland fire incidents, and new development, particularly in High and Very High fire hazard areas, would increase the risk of wildland fire and the damage potential of wildland fires. This impact is considered **significant**. An increase in the number of housing units in and adjacent to wildlands will correspond with an increase in the number of fire incidents. Impact significance before and after mitigation is shown in the table below.

Impact	Significance Before Mitigation*							
	Alt. #1 (No Project)		Alt. #2 (Roadway Constrained 6-Lane "Plus")		Alt. #3 (Environmentally Constrained)		Alt. #4 (1996 General Plan)	
	2025	Buildout	2025	Buildout	2025	Buildout	2025	Buildout
5.8-10: Increased Potential for Fire Incidents and Fire Hazards	S_3	S_4	S_2	S_2	S_4	S_3	S_1	S_1
Mitigation	**Significance After Mitigation***							
	Alt. #1 (No Project)		Alt. #2 (Roadway Constrained 6-Lane "Plus")		Alt. #3 (Environmentally Constrained)		Alt. #4 (1996 General Plan)	
	2025	Buildout	2025	Buildout	2025	Buildout	2025	Buildout
5.8-10(a), Implement Mitigation Measure 5.1-3(a); and 5.8-10(b), Preclude Development in Areas of High Wildland Fire Hazard	SU_3	SU_4	SU_2	SU_2	SU_4 (Measure 5.8-10(a) only)	SU_3 (Measure 5.8-10(a) only)	SU_1	SU_1

* Notes: LS = Less than Significant; N/A= Not Applicable; S = Significant; SU = Significant and Unavoidable. Significant impacts are ranked against each other by alternative for the 2025 scenario and the buildout scenario, from 1 (Worst Impact) to 4 (Least Impact). Where the impact under two different alternatives during the same time frame would be roughly equal in severity, the numerical ranking is the same.

Environmental Impacts Common to All Equal-Weight Alternatives

The risk of exposure of people and structures to wildland fire will increase if wildland fire incidents occur more frequently or if more development is located in areas prone to wildland fires. As discussed above, increasing human population and the associated activities in

wildland areas tends to increase the number of fire incidents. According to a study published by CDF, the increase in density of housing units in the Sierra Nevada Ecological Project study area (which included the entire county) corresponds with increases in the number of fire incidents. In other words, higher housing density is linked to increased frequency of fire incidents started by human activities. Additional development would increase the frequency of fire incidents in the county in proportion to the increase in housing. In addition, the increase in the number of new development in High and Very High fire hazard areas would increase the risk of exposure to wildland fires.

The land use maps for all four alternatives designate land uses within the High and Very High Fire Hazard Areas. For purposes of this analysis, the General Plan land use designations have been categorized based on the maximum intensity of land use that are allowed by each of the General Plan land use maps, as shown below:

- **High intensity:** high-density residential, medium-density residential, low-density residential (i.e., lot sizes ranging from 5 to 10 acres), multifamily residential, industrial, commercial, research and development, public facilities, and the adopted plan.
- **Medium intensity:** tourist recreational, rural land, rural residential (i.e., lot sizes ranging from 10 to 40 acres), and agricultural land.
- **Low intensity:** natural resources and open space. In general, these are areas expected to continue to function largely as undeveloped open space areas.

Table 5.8-11 shows the acreage of development, classified by the intensity of land use allowed under each land use designation, that would occur within the State Responsibility Areas that are identified as High and Very High fire hazard areas.

Most of these High and Very High fire hazard areas are located in the urban/wildland interface, where vegetation adjacent to and near residential structures provides fuel for the ignition and spread of wildland fires.

Increased population would increase the number of fire incidents overall, and development in Very High and High fire hazard areas would increase the number of structures and people that may be exposed to wildland fire hazard.

Table 5.8-11 Land Use Designation Intensities within High and Very High Fire Hazard Areas [1]				
General Plan Alternatives	Acreages of Various Intensity Land Uses			
	High	Medium	Low	Total
No Project [2]	72,606	86,794	173,668	333,068
Roadway Constrained 6-Lane "Plus"	56,607	63,014	213,447	333,068
Environmentally Constrained	40,638	77,490	214,940	333,068
1996 General Plan	72,606	86,794	173,668	333,068

[1] Consist only of State Responsibility Areas (SRAs).

[2] Although the land use designations for the No Project Alternative and 1996 General Plan Alternative are the same, the overall development density and the number of development projects under the No Project Alternative would be considerably less than under the 1996 General Plan Alternative due to restrictions on land subdivision.

Source: FRAP 1985, EPS 2002, EDAW 2003

No Project Alternative (Alternative #1)

Relevant Goals/Policies—No Project Alternative

The relevant policies of the 1996 General Plan that are applicable to the No Project Alternative are Policies 3.2.1.2, 5.7.4.1, 6.2.1.1, 6.2.2.1, 6.2.3.2, 6.2.4.1 and 6.2.4.2, and 6.2.5.1.

No Project Alternative (2025)—Impact Discussion

As shown in Table 5.8-11, the 1996 General Plan land use map, which would be applicable to this alternative, allows more parcels identified as high intensity within the High and Very High fire hazard areas to develop when compared to the land use maps for the Roadway Constrained 6-Lane "Plus" Alternative and the Environmentally Constrained Alternative. Given the Writ restrictions on residential subdivision (only one unit per legal parcel is allowed) aside from those within existing commitments, the No Project Alternative is expected to result in the lowest level of development. However, due to the restrictions on new subdivisions imposed by the Writ, more of the existing parcels in the rural regions will be developed with single-family dwellings. This would result in more development in the areas of high and very high fire hazard than in the Environmentally Constrained Alternative. The lower overall population growth would, however, reduce the number of wildfire incidents in areas located in the High and Very High fire hazard areas, resulting in the second lowest risk of exposure to wildland fire hazards.

Policy 6.2.5.1 would encourage the implementation of fire prevention education programs, which have been shown to an effective method for reducing human activities that may ignite fires (Sapsis 2003). While Policy 6.2.5.1 could help reduce the number of fire incidents, it would not eliminate fire incidents.

Policy 6.2.2.1 would require the review of all new developments for the fire hazard classification of the sites so that standards and mitigation can be applied. However, there is no mechanism in place to require ministerial projects to comply with this policy. Along with the County's Fire Hazard Ordinance, Policies 6.2.1.1, 6.2.3.2, 6.2.4.1, 6.2.4.2, 3.2.1.2, and 5.7.4.1 would require all developments to incorporate and maintain defensible space features, including adequate access for emergency vehicles and 30-foot fire break clearance from structures, in compliance with fire safety standards. Implementation of these fire safe measures, as required by County ordinance (and applicable to ministerial and discretionary development) and General Plan policies would reduce the intensity of wildland fire by reducing fuel loading. It would also reduce the extent of wildland fire by minimizing connected fuel areas that allow the spread of fire between wildlands and structures. Furthermore, it would ensure adequate access and water availability so that the capability and effectiveness of CDF, the local fire protection districts, and USFS in responding to fire incidents and suppressing wildland fires would not be impaired. However, it would not eliminate the damage potential of wildland fires. A study conducted by CDF has shown that while the County's wildland fire policies and ordinance do lower the probability of fire damage to individual structures, the amount of damage from wildland fire on a countywide basis would increase as development density increases (Greenwood 2002).

Given the County's Fire Hazard Ordinance and the General Plan policies, the frequency, extent, and intensity of wildland fires would likely be lower than would be the case in the absence of those requirements. However, increased population would increase the number of fire incidents overall, and development in Very High and High fire hazard areas would increase the number of structures and people that may be exposed to wildland fire hazard. Because injury, death, and damage cannot be prevented at new developments during the event of a wildland fire, this impact is considered significant.

No Project Alternative (Buildout)—Impact Discussion

Increased population growth and new development in Very High and High fire hazard areas would increase the number of fire incidents and the number of structures and people that would be exposed to wildland fire hazard. As discussed above, development density in Very High and High fire hazard areas would be lowest under this alternative. Thus, the risk would also be the lowest. Nonetheless, at buildout this alternative would result in considerable new

development in Very High and High fire hazard areas; the impacts associated with that development would be as described above in the discussion of impacts at 2025 except that the risk of exposure would be lowest of the four equal-weight alternatives. Because injury, death, and damage caused by wildland fire cannot be prevented, this impact is considered significant.

Roadway Constrained 6-Lane "Plus" Alternative (Alternative #2)

Relevant Goals/Policies—Roadway Constrained 6-Lane "Plus" Alternative

The relevant policies that are applicable to the Roadway Constrained 6-Lane "Plus" Alternative are Policies LU-7a, LU-7g, CO-11b, HS-1a, HS-1b, HS-2a and HS-2b, HS-2c, HS-2d and HS-2e, HS-3a and HS-3b, and PS-7c.

Roadway Constrained 6-Lane "Plus" Alternative (2025)—Impact Discussion

Under the Roadway Constrained 6-Lane "Plus" Alternative, increased population growth and new development in Very High and High fire hazard areas would increase the number of fire incidents and the number of structures and people that would be exposed to wildland fire hazard. As shown in Table 5.8-10, this alternative includes the second highest acreage of High Intensity land uses but the lowest acreage of Medium Intensity land uses of the four alternatives in Very High and High fire hazard areas. Outside existing commitments, legal parcels can only be split into a maximum of four parcels with a dwelling unit on each, if the resulting density is allowed by the land use designation. Overall, this alternative is expected to result in second highest development density in Very High and High fire hazard areas because the limitations on residential subdivisions in community regions will result in a greater number of parcel maps and development of existing lots in the rural regions.

Policy CO-11b would ensure the maintenance of Low Intensity land designations for fire-prone areas, thus reducing the number of people and structures that would be exposed to the risk of fire hazards. Policies HS-2d, HS-3a, and PS-7c would ensure that the latest fire safety practices and defensible space standards are implemented in the county.

Policy HS-2b and Policy HS-2c would discourage development in High and Very High fire hazard zones and would ensure that fire hazard classifications of new developments are reviewed and applicable standards are enforced to lower the risk of wildland fire to a Moderate fire hazard level. Policy LU-7g would require design features that reduce the fire hazard potential of new structures.

Policy LU-7a would ensure that there would be adequate water supply and pressure at new developments for fire protection purposes. Policies HS-1a, HS-1b, and PS-8d would maintain or improve the effectiveness of the fire response and suppression capabilities of the fire protection entities in the county. Policy HS-2e would discourage the development of gated subdivisions or require the provision of two points of access.

These policies would apply to discretionary approvals, so would not apply to ministerial development (one unit on a single legal parcel). However, the county's fire protection ordinances would apply, which address many of these policies (see No Project Alternative (2025)—Impact Discussion). Furthermore, Implementation Measure HS-B in the General Plan would require the County to coordinate with fire protection and prevention entities in the county to prepare a countywide Wildfire Safety Plan. It is expected that the implementation of the Wildfire Safety Plan would modify fire safety standards that would apply to both discretionary and ministerial projects in order to reduce the risks of wildland fire; however, it is not known what standards or programs would be required by the Wildfire Safety Plan, and the effectiveness of the standards and programs in reducing or avoiding wildland fire risks cannot be determined until the standards and programs are finalized.

These policies and ordinances could help reduce the frequency, extent, and intensity of wildland fires, as well as increasing the effectiveness of fire suppression efforts; however, they would not eliminate the exposure of structures and people to wildland fire hazards. This impact is considered significant. This alternative would result in the second densest development in Very High and High fire hazard areas, and the risk of exposure to wildland fire hazard would also be the second highest.

Roadway Constrained 6-Lane "Plus" Alternative (Buildout)—Impact Discussion

At buildout, this alternative would have considerably more development in Very High fire hazard areas than would be the case under the 2025 scenario. Because of the direct correlation between development density and fire incidents as discussed above, the risk of exposure would be commensurately higher. Although population growth at buildout under this alternative would be the second lowest of the four equal-weight alternatives, the location of this development is not dispersed, and exposes the second highest number of people and dwelling units to wildland fire hazards. This impact is considered significant.

Environmentally Constrained Alternative (Alternative #3)

Relevant Goals/Policies—Environmentally Constrained Alternative

The relevant policies that are applicable to the Environmentally Constrained Alternative are Policies LU-7a, LU-7g, CO-14b, HS-1a, HS-1b, HS-2a through HS-2e, HS-3a and HS-3b, and PS-7c. These policies are similar to those proposed for the Roadway Constrained 6-Lane "Plus" Alternative, except that Policy HS-2c includes language precluding development in areas of high and very high wildland fire hazard unless it can be demonstrated that the hazard can be reduced to a moderate or better level. This is a different approach than under the Roadway Constrained 6-Lane "Plus" Alternative. The Roadway Constrained 6-Lane "Plus" Alternative, by contrast, provides only that such development should be discouraged.

Environmentally Constrained Alternative (2025)—Impact Discussion

As shown in Table 5.8-10, the land use map for the Environmentally Constrained Alternative would allow the smallest acreage of high intensity designations, but the third highest acreage of medium intensity designations of the alternatives. Overall, the land use map for this alternative would allow subdivisions at the third highest development density in High and Very High fire hazard areas.

Policy HS-2c would preclude the development in High and Very High fire hazard areas unless such development would reduce the fire hazard level of the development site. In contrast to the other alternatives, this policy would reduce substantially the hazard potential of development in High and Very High fire hazard areas. However, the potential for injuries, deaths, and damages from wildland fires would not be eliminated. This impact is considered significant. This alternative would result in the second densest development in Very High and High fire hazard areas, and the level of significance under this alternative is listed as second highest of the four equal-weight alternatives. The level of risk, however, could be lower than the other alternatives because development would be allowed in high fire hazard areas only where the project has been designed to reduce fire risk to a moderate or better level.

Environmentally Constrained Alternative (Buildout)—Impact Discussion

Increased population growth and new development in Very High and High fire hazard areas could increase the number of fire incidents and the number of structures and people exposed to wildland fire hazard. This impact is considered significant.

1996 General Plan Alternative (Alternative #4)

Relevant Goals/Policies—1996 General Plan Alternative

For the relevant policies of the 1996 General Plan Alternative, please refer to the policies listed above under Relevant Goals/Policies—No Project Alternative. The key policy distinction between this alternative and the No Project Alternative is that the Writ would not operate to preclude subdivisions.

1996 General Plan Alternative (2025)—Impact Discussion

This alternative would allow subdivision and other development to the maximum density allowed by the land use designations. As shown in Table 5.8-10, the acreage of land with high- and medium-intensity designations would be highest under this alternative. As such, the development density in Very High and High fire hazard areas would be highest, as would the risk. Please refer to No Project Alternative (2025)—Impact Discussion for discussion of how the policies would serve to lessen these impacts. This impact is considered significant.

1996 General Plan Alternative (Buildout)—Impact Discussion

This alternative would result in the densest development in Very High and High fire hazard areas, and the risk of exposure to wildland fire hazard would also be the highest. Please refer to No Project Alternative (Buildout)—Impact Discussion for discussion of policies and impacts. This impact is considered significant.

Mitigation Measure 5.8-10—No Project Alternative

The County shall implement both of the following measures:

< Mitigation Measure 5.8-10(a): Implement Mitigation Measure 5.1-3(a)

< Mitigation Measure 5.8-10(b): Preclude Development in Areas of High Wildland Fire Hazard

These proposed mitigation measures are described below. With implementation of these mitigation measures, impacts would be reduced, but not to a less-than-significant level.

Mitigation Measure 5.8-10(a): Implement Mitigation Measure 5.1-3(a)

The County shall implement Mitigation Measure 5.1-3(a) described in Section 5.1, Land Use and Housing. This measure would require review and conformity of discretionary and ministerial projects with General Plan policies aimed at reducing fire hazards and their associated risks. While this would reduce fire hazard-related impacts, it would not eliminate them for the reasons described in the policy analysis for each alternative. This impact would remain significant and unavoidable.

Mitigation Measure 5.8-10(b): Preclude Development in Areas of High Wildland Fire Hazard

The County shall implement the following new policy:

> **New Policy:** The County shall preclude development in areas of high and very high wildland fire hazard unless it can be demonstrated that the hazard can be reduced to a moderate or better level as determined by the local fire protection district and the California Department of Forestry and Fire Protection.

Mitigation Measure 5.8-10—Roadway Constrained 6-Lane "Plus" Alternative

The County shall implement both of the following measures:

- Mitigation Measure 5.8-10(a): Implement Mitigation Measure 5.1-3(a)
- Mitigation Measure 5.8-10(b): Preclude Development in Areas of High Wildland Fire Hazard

These proposed mitigation measures are described below. With implementation of these mitigation measures, impacts would be reduced, but not to a less-than-significant level.

Mitigation Measure 5.8-10(a): Implement Mitigation Measure 5.1-3(a)

The County shall implement Mitigation Measure 5.1-3(a) described in Section 5.1, Land Use and Housing.

Mitigation Measure 5.8-10(b): Preclude Development in Areas of High Wildland Fire Hazard

Policy HS-2c shall be revised as follows:

> **Revised Policy HS-2c:** The County shall ~~discourage~~ preclude development in areas of high and very high wildland fire hazard unless it can be demonstrated that the hazard can be reduced to a moderate or better level as determined by the local fire protection district and the California Department of Forestry and Fire Protection.

While development in high wildland fire hazard areas would be precluded, overall population increases would still be expected to increase the overall numbers of wildland fires and, therefore, the associated risk. This is a significant and unavoidable impact.

Mitigation Measure 5.8-10—Environmentally Constrained Alternative

Please refer to the proposed Mitigation Measure 5.8-10(a) under the No Project Alternative above. With implementation of this mitigation measure, impacts would be reduced, but not to a less-than-significant level.

Mitigation Measure 5.8-10—1996 General Plan Alternative

Please refer to the proposed mitigation measures under the No Project Alternative above. With implementation of these mitigation measures, impacts would be reduced, but not to a less-than-significant level.