

3.12 Hazards and Hazardous Materials

This section addresses hazards and hazardous materials that could be affected by implementation of the proposed program—specifically, known hazardous substances sites; emergency response to hazardous materials incidents; hazards associated with agricultural land uses; mosquito-transmitted disease; hazards related to schools, airports, and airstrips; wildland fire risk; and oil and gas pipelines and wells.

This section is composed of the following subsections:

- Section 3.12.1, “Environmental Setting,” describes the physical conditions in the study area as they apply to hazards and hazardous materials.
- Section 3.12.2, “Regulatory Setting,” summarizes federal, State, and regional and local laws and regulations pertinent to evaluation of the proposed program’s impacts related to hazards and hazardous materials.
- Section 3.12.3, “Analysis Methodology and Thresholds of Significance,” describes the methods used to assess the environmental effects of the proposed program and lists the thresholds used to determine the significance of those effects.
- Section 3.12.4, “Environmental Impacts and Mitigation Measures for NTMAs,” discusses the environmental effects of near-term management activities (NTMAs) and identifies mitigation measures for significant environmental effects.
- Section 3.12.5, “Environmental Impacts, Mitigation Measures, and Mitigation Strategies for LTMAAs,” discusses the environmental effects of long-term management activities (LTMAAs) and identifies mitigation measures for significant environmental effects.

NTMAs and LTMAAs are described in detail in Section 2.4, “Proposed Management Activities.”

For discussions of geologic hazards associated with earthquakes and liquefaction, emergency evacuation and access routes, and hazard issues related to water quality, respectively, see Section 3.10, “Geology, Soils, and Seismicity (Including Mineral and Paleontological Resources)”; Section 3.19, “Transportation and Traffic”; and Section 3.21, “Water Quality.”

For discussions of hazards associated with flooding, seiche, mudflow, redirection of flood flows, or placing housing within a 100-year flood hazard area, see Section 3.13, “Hydrology.”

3.12.1 Environmental Setting

Information Sources Consulted

Sources of information used to prepare this section include data from the following:

- California Environmental Protection Agency (Cal/EPA) Cortese List (DTSC 2010)
- California Fire Hazard Severity Zone Map, published by the California Department of Forestry and Fire Protection (CAL FIRE) (2010)
- *Best Management Practices for Mosquito Control on California State Properties*, published by the California Department of Public Health (DPH) (2008)
- Schools and airport metadata from the California Department of Transportation (Caltrans) (2008)

Geographic Areas Discussed

Hazards and hazardous materials are discussed for the following geographic areas within the study area:

- Extended systemwide planning area (Extended SPA) divided into the Sacramento and San Joaquin Valley and foothills, and the Sacramento–San Joaquin Delta (Delta) and Suisun Marsh
- Sacramento and San Joaquin Valley watersheds
- SoCal/coastal Central Valley Project/State Water Project (CVP/SWP) service areas

Hazards and hazardous materials are discussed by issue area rather than by geographic area because of the similarities between geographic areas; differences are noted as needed. None of the management activities included in the proposed program would be implemented in the SoCal/coastal CVP/SWP service areas. In addition, implementation of the proposed program would not result in long-term reductions in water deliveries to the SoCal/coastal CVP/SWP service areas (see Section 2.6, “No Near- or Long-Term Reduction in Water or Renewable Electricity Deliveries”). Given these conditions, the program is not expected to result

in adverse impacts related to hazards in the SoCal/coastal CVP/SWP service areas. Therefore, hazards and hazardous materials in the SoCal/coastal CVP/SWP service areas are not discussed in detail.

Terminology

For purposes of this section, the term “hazardous materials” refers to both hazardous substances and hazardous wastes. A “hazardous material” is defined as “a substance or material that...is capable of posing an unreasonable risk to health, safety, and property when transported in commerce” (49 Code of Federal Regulations (CFR) 171.8). Section 25501 of the California Health and Safety Code defines a hazardous material as follows:

“Hazardous material” means any material that, because of its quantity, concentration, or physical, or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. “Hazardous materials” include, but are not limited to, hazardous substances, hazardous waste, and any material that a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.

“Hazardous wastes” are defined in Section 25141(b) of the California Health and Safety Code as wastes that because of their quantity, concentration, or physical, chemical, or infectious characteristics may do either of the following:

1. Cause, or significantly contribute to an increase in mortality or an increase in serious illness.
2. Pose a substantial present or potential hazard to human health or the environment...when improperly treated, stored, transported, or disposed of, or otherwise managed.

Agency-Documented Hazardous Substances Sites in the Study Area

Cal/EPA maintains a list of hazardous substances sites (commonly referred to as the Cortese List) that is used as a planning tool in permitting processes and for compliance with CEQA. The Cortese List is updated at least annually, pursuant to Section 65962.5 of the California Government Code, and includes information compiled by the California Department of Toxic Substances Control (DTSC), DPH, the State Water Resources Control Board (SWRCB), and the California Integrated Waste Management Board.

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The Cortese List, which is available in an online database, identifies the following:

- Hazardous waste and substances sites from the DTSC EnviroStor database
- Leaking underground storage tank sites from the SWRCB GeoTracker database
- Solid waste disposal sites identified by the SWRCB with waste constituents above hazardous waste levels outside the waste management unit, which is a contiguous area of land on or in which hazardous waste is placed, or the largest area in which there is significant likelihood of mixing hazardous waste constituents in the same area (e.g., a surface impoundment, a waste pile, a land treatment area, a landfill cell, a tank and its associated piping and underlying containment system, and a container storage area)
- Cease-and-desist orders and cleanup and abatement orders (nonhazardous materials) from the SWRCB
- Sites determined by DTSC to need immediate corrective action to abate an imminent or substantial endangerment and sites where DTSC has taken or contracted for corrective action because a facility owner or operator has failed to comply with a corrective action order

The study area includes numerous sites subject to agency listing. Figure 3.12-1 shows sites included on the Cortese List, including federally funded hazardous materials sites (Superfund sites), military evaluation sites, and State response sites. In addition to sites mapped in Figure 3.12-1, other agency-listed sites, such as leaking underground storage tanks, are prevalent in the study area, particularly in urbanized areas. Sites subject to agency listing that are located in the study area would be added to and removed from the Cortese List and other agency lists during implementation of the proposed program, as new sites are generated and listed sites are remediated.

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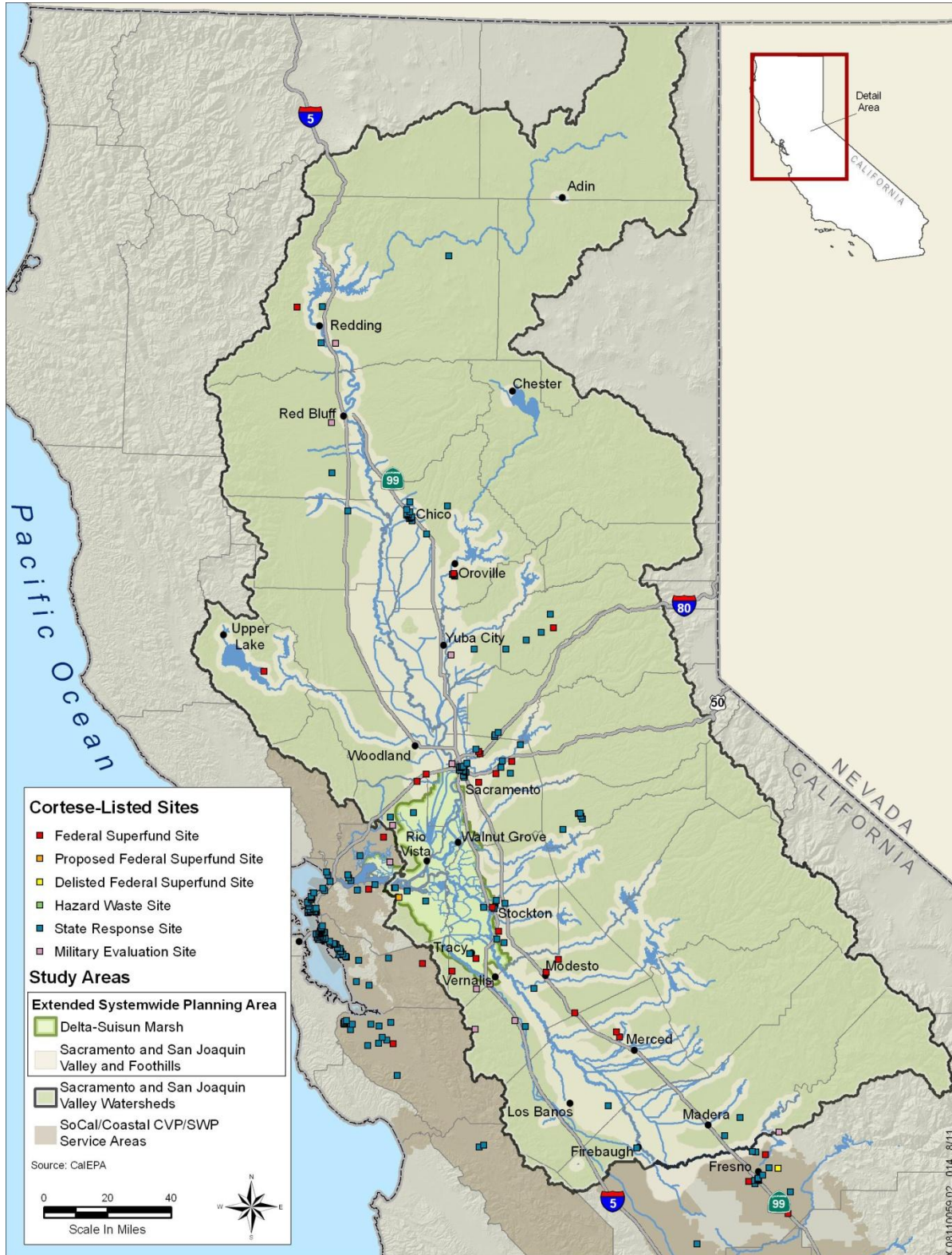


Figure 3.12-1. Sites Included on the Cortese List that are Located in the Study Area

Hazards Associated with Agricultural Land Uses

The study area, particularly the Extended SPA, has historically been and is currently being used largely for agricultural purposes. Agricultural land use typically involves the application of pesticides and herbicides and the use of fuels, lubricants, and other fluids associated with the operation and maintenance of agricultural equipment, the residues of which may remain in soils for years. These substances and residues in the soil could pose a health hazard to workers and employees. In addition, agricultural land uses often require wells, underground piping that could contain asbestos, and other subsurface infrastructure that could become a hazard if encountered during construction activities. Furthermore, the study area contains aboveground and underground utility infrastructure, such as pipelines (e.g., water, gas, and fuels), transmission lines, and gas and oil wells that may contain hazardous materials.

Mosquito-Transmitted Disease

The study area also contains naturally occurring hazards that can affect the health of the general population, such as mosquito-borne diseases.

All mosquito species are potential vectors of organisms that can cause disease to pets, domestic animals, wildlife, and humans. The life cycle of the mosquito consists of four stages: egg, larva, pupa, and adult (DPH 2008:5–8). The egg, larva, and pupa stages are completed in calm, standing water in permanent, seasonal, or intermittent waters, including seasonal and permanent wetlands, and even in small, isolated waters, such as drying pools of ephemeral drainages, tire ruts, and containers. Larvae hatch from eggs in water and feed on organic matter and microorganisms, such as bacteria. Fish and predatory insects feed on mosquito larvae and greatly reduce their abundance in permanent bodies of water. The pupa stage lasts several days, during which the larva changes into an adult. Seasonal and environmental conditions determine the length of time it takes for larval mosquitoes to complete their development; some species develop faster than others under the same conditions. Depending on average temperatures, it may take from 4 days to 1 month for the mosquito to mature from egg to adult; with warmer temperatures, development accelerates.

Adults may remain close to where they hatched or may disperse from several hundred yards to several miles, depending on the species (Walton 2003:2; ACMAD 2000:1). Female mosquitoes require meals of blood for protein so that they can produce eggs (DPH 2008:5). Hosts that can supply blood include reptiles, amphibians, birds, and mammals (including humans). Most adult females live for about 2 weeks, although some may survive longer, and those that emerge late in the season may hibernate through winter and begin laying eggs in spring.

Although mosquitoes can transmit diseases such as Western equine encephalitis, St. Louis encephalitis, endemic malaria, and parasitic worms, public concern regarding mosquito-transmitted diseases has increased since West Nile virus was first detected in the United States in 1999. A mosquito first acquires West Nile virus by feeding on a bird with the virus in its blood. Although most people infected with West Nile virus experience no symptoms, approximately 20 percent will develop West Nile fever. West Nile fever symptoms, which may last from a few days to several weeks, include fever, fatigue, body aches, headache, skin rash on the trunk of the body, and swollen lymph glands. Most people and animals that are infected with the virus have mild symptoms or none. In rare cases, the virus can cause encephalitis (inflammation of the brain). During the last 5 years, animals and humans have been infected with West Nile virus in all counties of the Sacramento and San Joaquin Valley and foothills, the Delta and Suisun Marsh, and the Sacramento and San Joaquin Valley watersheds (USGS 2010).

Schools in the Study Area

Sensitive receptors are people or other organisms that are considered to have a substantially increased sensitivity or rate of exposure to contaminants. Because of this increased sensitivity, special consideration must be given to projects located near sensitive receptors. CEQA specifically establishes that special consideration must be given to projects located near schools (i.e., within one-quarter mile) when considering hazards and hazardous materials (California Public Resources Code (PRC), Sections 21151.2 and 21151.4). This consideration allows for careful examination and disclosure of potential health effects on children associated with exposure to hazardous materials, wastes, and substances.

Schools located in the study area are shown in Figure 3.12-2. In general, schools are concentrated in urban areas, but they are distributed throughout most of the study area. A few schools are located along rivers in the Sacramento and San Joaquin Valley and foothills (e.g., Cache Creek), and portions of central Sacramento and San Joaquin valleys, in the interior of the Delta and Suisun Marsh, and around some reservoirs (e.g., Shasta Reservoir) in the Sacramento and San Joaquin Valley watersheds.

Airports and Airstrips in the Study Area

Safety hazards associated with airports and airstrips are generally related to construction of tall structures and the creation of wildlife attractants (e.g., wetlands, golf courses, and waste disposal operations) that could interfere with airplane flight paths. Figure 3.12-3 identifies the location of the major airports and airstrips in the study area. Small community and private airports and airstrips in the study area are not shown in Figure 3.12-3.

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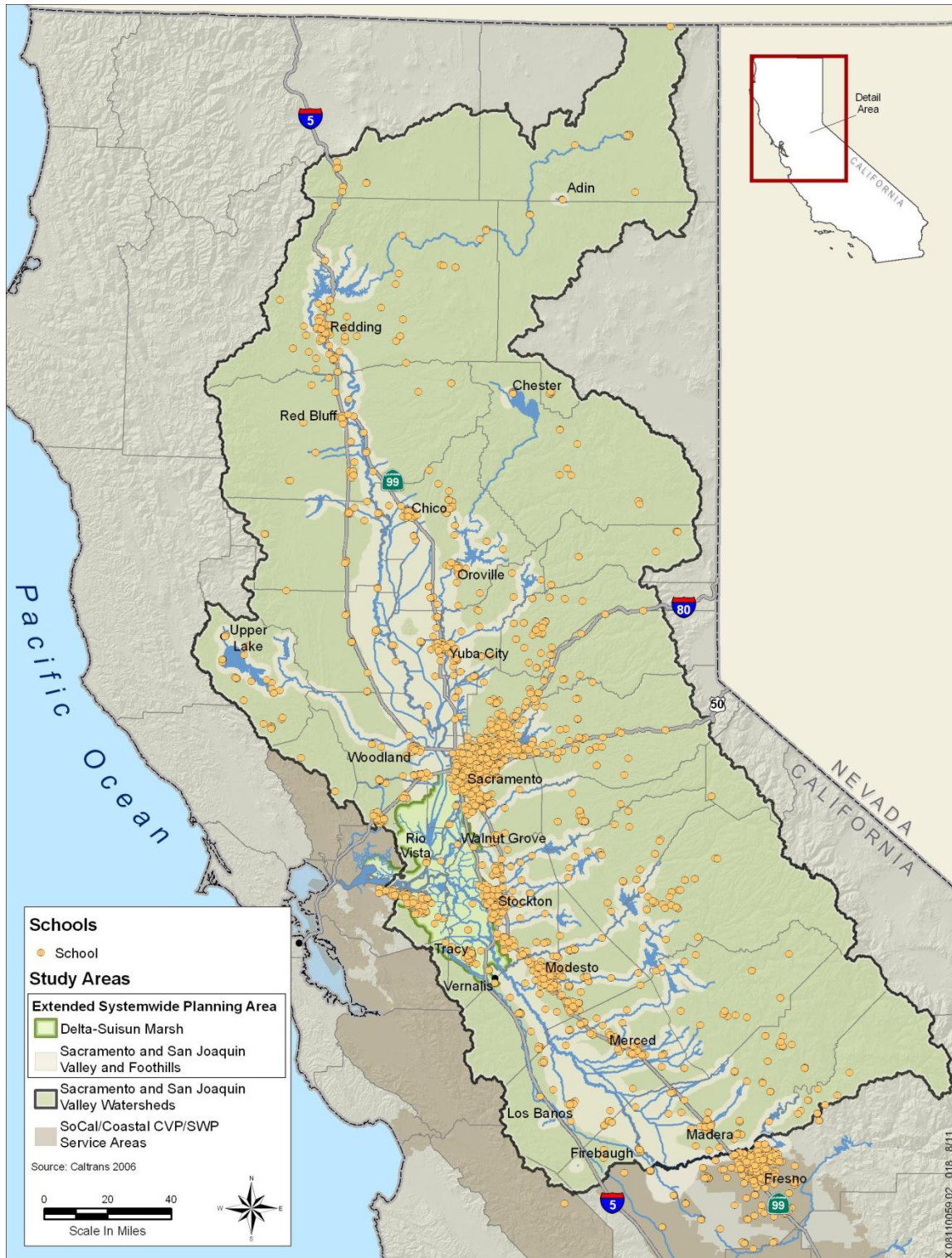


Figure 3.12-2. Schools Located in the Sacramento and San Joaquin Valley and Foothills, the Delta and Suisun Marsh, and the Sacramento and San Joaquin Valley Watersheds

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Figure 3.12-3. Airports and Airstrips Located in the Study Area

The study area provides habitat for several groups of bird species that can be hazardous to aviation (FAA 2007):

- **Waterfowl**—This group includes all ducks, geese, and swans. Although not strictly waterfowl, rails and grebes are also included in this guild.
- **Gulls**—Agricultural, developed, riparian, wetland, and open water areas provide habitat for gulls.
- **Sparrows, larks, and finches**—Species in this group forage in most of the study area and breed in most land cover types.
- **Raptors**—Several species of raptors use the study area. The open land cover types (e.g., grassland and agricultural habitats) provide foraging habitat, and riparian areas and other woodlands and forests provide perch sites and nesting habitat for raptors.
- **Swallows**—Swallows are summer migrants, present from spring to early fall. Riparian areas, open water, wetlands, and wet meadows provide foraging habitat for swallows; other habitats also provide foraging habitat to a lesser extent. Postbreeding flocks of swallows can be present in late summer, particularly when flying insects are abundant.
- **Blackbirds and starlings**—Agricultural habitats, disturbed areas, and, to a lesser extent, other habitats provide foraging habitat for blackbirds and starlings. All species in this guild are gregarious and can form large flocks.
- **Corvids**—This guild includes ravens, crows, magpies, and jays. Most of the study area provides habitat for these species.
- **Columbids**—Species in this guild include rock pigeon (i.e., the “typical” pigeon found in urban settings) and mourning dove. In the study area, agricultural, developed, and disturbed areas and, to a lesser extent, grasslands and other habitats provide habitat for columbids.
- **Wading birds**—This guild includes herons and egrets. Riparian areas, wetlands, and the margins of waterways provide habitat for wading birds in the study area.

Birds with body masses of more than 4 pounds exceed federal airframe and engine certification standards for resistance to wildlife strikes (DOT and USDA 2005), and therefore present the greatest risk of hazards to aviation.

Wildland Fire Risk

CAL FIRE has developed a fire hazard severity scale that considers vegetation, climate, and slope to evaluate the level of wildfire hazard in all State Responsibility Area lands. A State Responsibility Area is defined as a part of the state where CAL FIRE is primarily responsible for providing basic protection against wildland fires. Areas under the jurisdiction of other fire protection services are considered to be Local Responsibility Areas. CAL FIRE designates three levels of Fire Hazard Severity Zones—Moderate, High, and Very High—to indicate the severity of fire hazard in a particular geographic area.

Figure 3.12-4 shows the designated fire hazard severity zones in the study area. As shown, areas of higher elevations that contain fuels (i.e., wooded areas) are considered to be at high risk for fires. In general, the Sacramento and San Joaquin Valley is not rated (i.e., no rating color shown in Figure 3.12-4).

Oil and Gas Pipelines and Wells

Extensive natural gas fields are located beneath the Sacramento and San Joaquin Valley and the Delta and Suisun Marsh (DOC 2001). Natural gas is extracted from these fields by a large number of wells and pipelines. Abandoned underground oil pipelines are also known to traverse the study area. Figure 3.12-5 shows the locations of abandoned pipelines that have been documented. Active oil and gas pipelines and wells are discussed in Section 3.20, “Utilities and Service Systems,” and are shown in Figure 3.20-3.

A well is abandoned when oil or gas production ends at the well or when it is determined to be a dry hole (i.e., no oil or gas exists). Proper abandonment procedures involve plugging the well by placing cement in the well bore or casing at certain intervals, as specified in California laws and regulations. The plug is intended to seal the well bore or casing and prevent fluid from migrating between underground rock layers.

The California Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR) inventories abandoned wells (DOC 2010). In addition to wells identified by DOGGR, confidential wells (e.g., exploratory wells) may be located in the study area. The location of wells may be kept confidential for up to 2 years. Confidential wells and other wells not listed may be found during site surveying for earth-moving activities.

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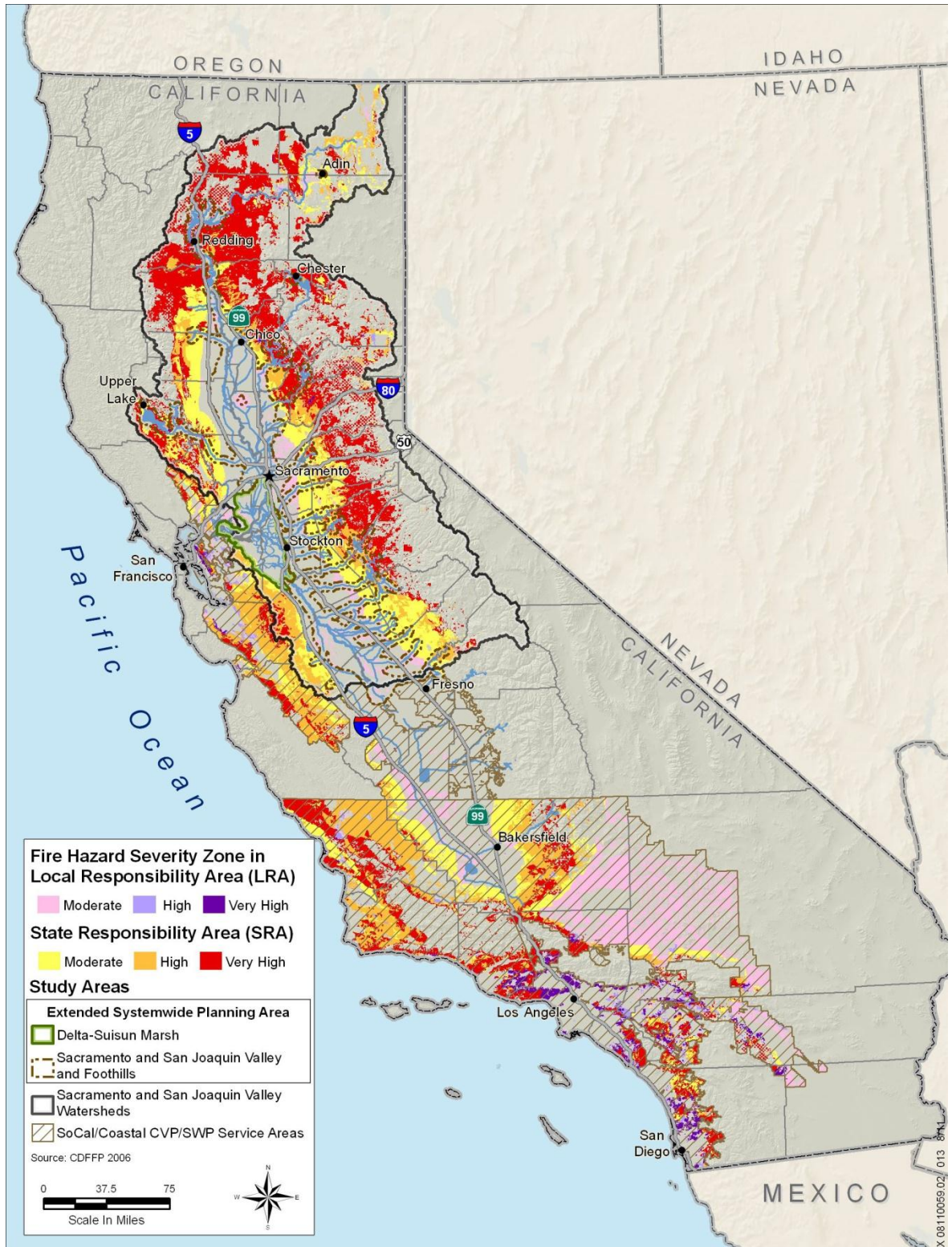


Figure 3.12-4. California Fire Hazard Severity Zones in Local and State Responsibility Areas

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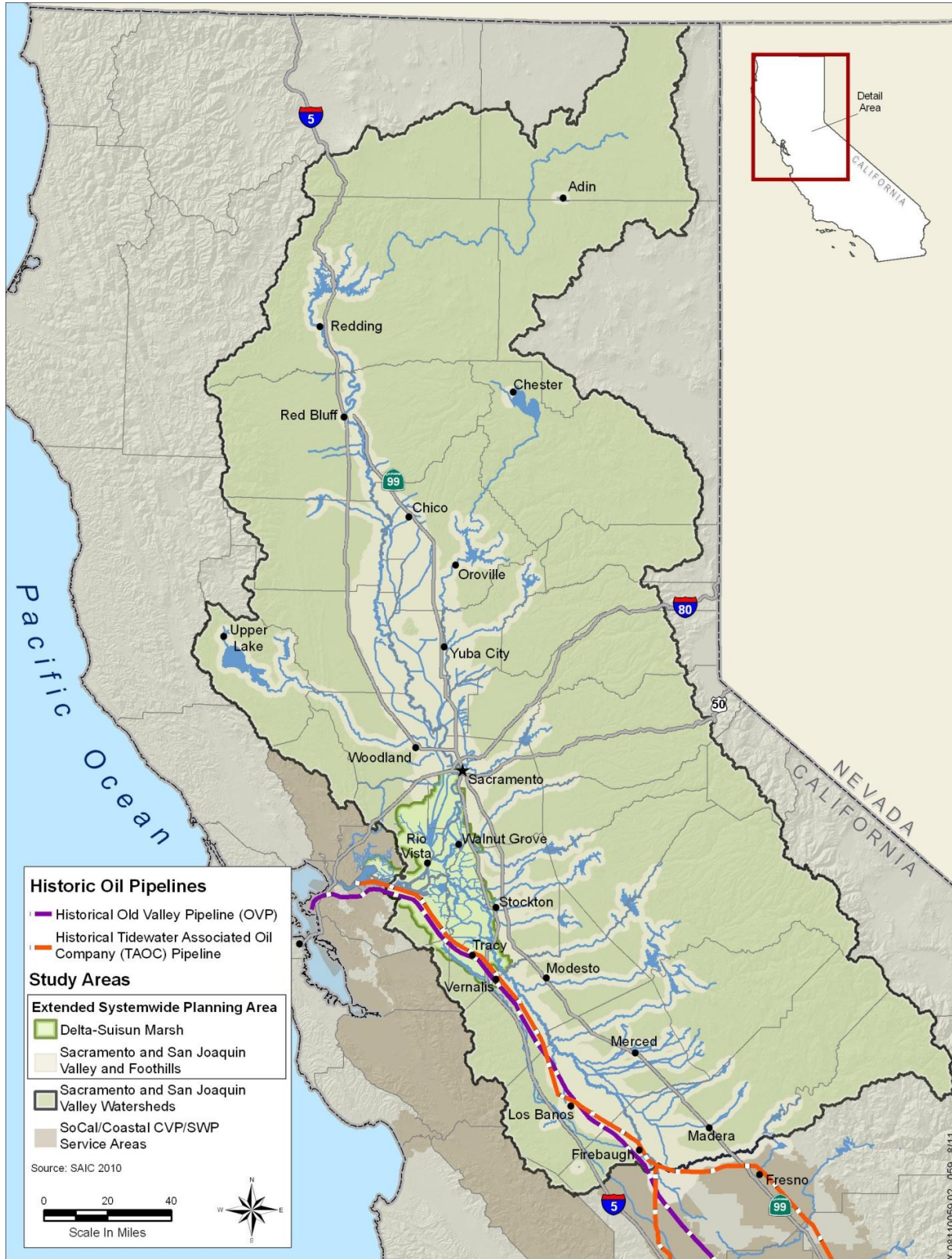


Figure 3.12-5. Historic/Abandoned Oil Pipelines

Health and safety hazards may occur if earth-moving activities disrupt active, idle, or abandoned wells or pipelines. Disruption could potentially result in soil and groundwater contamination, oil and methane seeps, fire hazards, and air quality degradation.

3.12.2 Regulatory Setting

The following text summarizes federal, State, and regional and local laws and regulations pertinent to evaluation of the proposed program's impacts related to hazards and hazardous materials.

Federal

Hazardous Materials Handling At the federal level, the principal agency regulating the generation, transport, and disposal of hazardous substances is the U.S. Environmental Protection Agency (EPA), under the authority of the Resource Conservation and Recovery Act (RCRA). The RCRA established an all-encompassing federal regulatory program for hazardous substances that is administered by EPA. Under the RCRA, EPA regulates the generation, transportation, treatment, storage, and disposal of hazardous substances. The RCRA was amended in 1984 by the Hazardous and Solid Waste Amendments of 1984, which specifically prohibit the use of certain techniques for disposing of various hazardous substances. The Federal Emergency Planning and Community Right-to-Know Act of 1986 imposes requirements on hazardous materials planning to help protect local communities in the event of accidental release of hazardous substances. In California, EPA has delegated much of the RCRA requirements to DTSC. The Toxic Substances Control Act authorizes EPA to regulate the manufacture, use, distribution in commerce, and disposal of chemical substances.

Hazardous Materials Transport The U.S. Department of Transportation (DOT) regulates transportation of hazardous materials between states. State agencies with primary responsibility for enforcing federal and State regulations and responding to hazardous materials transportation emergencies are the California Highway Patrol (CHP) and Caltrans. Together, these agencies determine container types used and license hazardous waste haulers for transportation of hazardous waste on public roads.

The DOT Federal Railroad Administration enforces the hazardous materials regulations promulgated by the Pipeline and Hazardous Materials Safety Administration for rail transportation. These regulations apply to railroads, shippers, and other transporters of hazardous materials. Such transporters are required to adhere to security plans and to train employees involved in offering, accepting, or transporting hazardous materials on both safety and security matters.

Worker Safety The U.S. Department of Labor, Occupational Safety and Health Administration (OSHA), is responsible at the federal level for ensuring worker safety. OSHA sets federal standards for implementing workplace training, identifying exposure limits, and establishing safety procedures for the handling of hazardous substances, as well as other hazards. OSHA also establishes criteria by which each state can implement its own health and safety program.

Comprehensive Environmental Response, Compensation, and Liability Act The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) created a trust fund and broad federal authority to remedy releases or threatened release of hazardous substances that could endanger public health or the environment. CERCLA created the Superfund hazardous substance cleanup program (Public Law 96-510, enacted December 11, 1980). It was reauthorized and enlarged by the Superfund Amendments and Reauthorization Act of 1986 (Public Law 99-499). EPA compiles a list of national priorities among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States and its territories, known as the National Priorities List. These locations are commonly referred to as “Superfund sites.”

Airport Safety Part 77 of the Federal Aviation Regulations (FAR), “Objects Affecting Navigable Airspace,” has been adopted as a means of monitoring and protecting the airspace required for safe operation of aircraft and airports. Objects that exceed certain specified height limits constitute airspace obstructions. FAR Section 77.13 requires that the Federal Aviation Administration (FAA) be notified of proposed construction or alteration of certain objects within a specified vicinity of an airport, among them the following:

1. *Any construction or alteration of more than 200 feet in height above the ground level at its site.*
2. *Any construction or alteration of greater height than an imaginary surface extending outward and upward at...[a slope of] 100 to 1 for a horizontal distance of 20,000 feet from the nearest point of the nearest runway of each...[public-use airport, public-use airport under construction, or military airport] with at least one runway more than 3,200 feet in actual length, excluding heliports.*

FAA is responsible for enforcing 14 CFR 139, which prescribes rules regarding operation of airports used by aircraft with seating capacity of more than 30 passengers. FAA roles and responsibilities relating to wildlife hazards and their associated human health and safety concerns are

addressed in 14 CFR 139.337, “Wildlife Hazard Management.” An ecological study must be prepared and submitted to FAA when multiple birds or other wildlife are struck by aircraft or ingested into aircraft engines, or when the number of birds or other wildlife present in an airport flight pattern is sufficient to result in such hazards. FAA determines whether a wildlife hazard management plan is needed.

FAA’s Office of Airport Safety and Standards has published advisory circulars and program policy and guidance directives that provide more information on determining the need for a hazard management plan. FAA Advisory Circular 150/5200-33B, “Hazardous Wildlife Attractants on or Near Airports,” dated August 28, 2007, provides guidance on locating certain land uses with the potential to attract hazardous wildlife to or in the vicinity of public use airports. FAA recommends the following separations when siting wildlife attractants, such as waste disposal operations, wastewater treatment facilities, and wetlands (FAA 2007):

- 5,000 feet from airports serving piston-powered aircraft
- 10,000 feet from airports serving turbine-powered aircraft
- 5 miles from airports where the wildlife attractant may cause hazardous wildlife movement into or across the approach or departure airspace

State

Hazardous Waste Control Act of 1972 In response to passage of the Hazardous Waste Control Act of 1972, Title 22, Division 20, Chapter 6.5 of the California Health and Safety Code, as amended, establishes the framework for managing hazardous waste in California. DTSC is the responsible agency for the implementation of the Hazardous Waste Control Act. DTSC has the authority to delegate enforcement responsibility to local jurisdictions that enter into an agreement with the State agency for the generation, transport, and disposal of hazardous substances under the Hazardous Waste Control Act.

California Hazardous Substances Account Act The California Hazardous Substances Account Act (California Health and Safety Code Section 25300 et seq.) is similar to CERCLA (see above). This law authorizes DTSC to order and/or oversee the cleanup of contaminated sites and hazardous substances releases. The regional water quality control boards also have a role in identifying and cleaning up hazardous waste sites in the state.

Hazardous Materials Handling The California Hazardous Materials Release Response Plans and Inventory Law of 1985, also known as the

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Business Plan Act, requires preparation of hazardous materials business plans and disclosure of hazardous materials inventories. A business plan includes an inventory of hazardous materials handled, facility floor plans showing where hazardous materials are stored, an emergency response plan, and provisions for employee training in safety and emergency response procedures (California Health and Safety Code, Division 20, Chapter 6.95, Article 1). Statewide, DTSC has primary regulatory responsibility for managing hazardous materials, with delegation of authority to local jurisdictions that enter into agreements with the State. Local agencies, including the county environmental health departments, administer these laws and regulations.

Pipeline Safety The Office of the State Fire Marshal regulates the safety of intrastate hazardous liquid transportation pipelines in California and acts as an agent of the federal Office of Pipeline Safety for regulation of interstate pipelines pursuant to 49 CFR 195 (DOT). The Office of the State Fire Marshal's pipeline safety staff members inspect, test, and investigate to coordinate compliance with all federal and state pipeline safety laws and regulations. Hazardous liquid pipelines are also periodically tested for integrity using procedures approved by the Office of the State Fire Marshal. The fire marshal's office also maintains geographic information system (GIS)-based maps of all regulated pipelines and has been named as a State repository for pipeline data by the National Pipeline Mapping System.

Underground Storage Tanks Division 20, Chapter 6.7 of the California Health and Safety Code governs the State's Underground Storage Tank program and the SWRCB regulates the program in Title 23, Division 3, Chapters 16 and 18 of the California Code of Regulations (CCR). Article 7, Section 2672 lists requirements for permanent closure of underground storage tanks, including removal of hazardous wastes and recyclable materials, and procedures for either closing in place or removing for reuse at another location.

Worker Safety The California Occupational Health and Safety Administration (Cal/OSHA) assumes primary responsibility for developing and enforcing workplace safety regulations in California. Cal/OSHA regulations pertaining to the use of hazardous materials in the workplace (CCR Title 8) include requirements regarding safety training, availability of safety equipment, accident and illness prevention programs, hazardous substance exposure warnings, and preparation of emergency action and fire prevention plans. Cal/OSHA enforces hazard communication program regulations that have training and information requirements, including procedures for identifying and labeling hazardous substances, communicating hazard information related to hazardous substances and

their handling, and preparing health and safety plans to protect workers and employees at hazardous waste sites. The hazard communication program requires that employers make Material Safety Data Sheets available to employees and document employee information and training programs.

Emergency Response to Hazardous Materials Incidents

California has developed an emergency response plan to coordinate emergency services provided by federal, State, and local government agencies and private firms. One part of the plan addresses the response to hazardous materials incidents. The plan is managed by the California Emergency Management Agency (CalEMA), which was established in 2009 as a merger of the former Governor's Office of Emergency Services and the Governor's Office of Homeland Security. CalEMA coordinates the responses of other agencies, including Cal/EPA, the CHP, and the California Department of Fish and Game.

Local governments (i.e., cities and counties) develop ordinances for the establishment of emergency organizations and local disaster councils. In general, these ordinances guide the development of emergency plans and delegate responsibility for emergency management operations. In the event of an emergency, local governments may implement emergency plans and take actions, such as deploying field-level emergency response personnel, activating emergency operations centers, and issuing orders to protect the public. In general, plans provide information related to phases of emergency response (e.g., preparation, response, recovery), incident command systems, and emergency management organization.

Government Code Section 65962.5 (Cortese List) The provisions of Section 65962.5 of the California Government Code are commonly referred to as the "Cortese List" (after the legislator who authored the legislation that enacted it). The Cortese List is a planning document used by State and local agencies to comply with CEQA requirements to identify the location of hazardous materials release sites. Government Code Section 65962.5 requires Cal/EPA to develop an updated Cortese List annually, at minimum. DTSC is responsible for a portion of the information contained in the Cortese List. Other State and local government agencies are required to provide additional hazardous material release information for the Cortese List.

California Accidental Release Prevention Program The goal of the California Accidental Release Prevention Program is to reduce the likelihood and severity of extremely hazardous materials releases. Any business that handles regulated substances (chemicals that pose a major threat to public health and safety or the environment because they are highly toxic; are flammable; or may explode, including ammonia, chlorine

gas, hydrogen, nitric acid, and propane) is required to prepare a risk management plan. A risk management plan describes current and past practices and releases, the potential impact of releases, and the business's actions or planned actions to prevent releases and minimize their impact if they occur.

Regional and Local

Government Planning California law requires that each county and city in the state adopt a general plan (California Government Code, Section 65300). General plans consist of development policies and objectives for the long-term physical development of counties and cities. Each general plan must include a safety element that addresses a variety of natural and human-caused hazards. At a minimum, the safety element must adopt policies related to fire safety, flooding, and geologic and seismic hazards (California Government Code, Section 65302(g)). Should a place-based project be defined and pursued as part of the proposed program, and should the CEQA lead agency be subject to the authority of local jurisdictions, the applicable county and city policies and ordinances would be addressed in a project-level CEQA document as necessary.

Certified Unified Program Agencies Cal/EPA oversees implementation of the Unified Program, which consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections, and enforcement activities of six environmental and emergency response programs. The Enforcement and Emergency Response Program administers the technical implementation of the State's Unified Program at the local level and conducts triennial reviews of Unified Program agencies to ensure their programs are consistent statewide, conform to standards, and deliver quality environmental protection at the local level. Certified Unified Program Agencies (83 local agencies certified by the Secretary of Cal/EPA) implement the standards set forth by the corresponding agency for each program.

Vector Control Districts Mosquitoes are controlled by mosquito abatement/vector control districts. These districts are local governmental organizations responsible for controlling specific disease vectors in their jurisdictions. They are authorized (by Chapter 5 of Division 3 of the California Health and Safety Code) to conduct surveillance for vectors, prevent the occurrence of vectors, and abate production of vectors, on both private and public properties. Mosquito control measures, such as those identified as part of sound Integrated Vector Management, include biological control, pesticide application, and habitat modification to eliminate standing water. Vector control districts also review, comment on, and make recommendations regarding federal, State, and local land use

planning and environmental quality processes, documents, permits, licenses, and entitlements for projects with respect to vector production.

3.12.3 Analysis Methodology and Thresholds of Significance

This section provides a program-level evaluation of the direct and indirect effects related to hazards and hazardous materials of implementing management actions included in the proposed program. These proposed management actions are expressed as NTMAs and LTMA. The methods used to assess how different categories of NTMAs and LTMA could affect hazards and hazardous materials are summarized in “Analysis Methodology”; thresholds for evaluating the significance of potential impacts are listed in “Thresholds of Significance.” Potential effects related to each significance threshold are discussed in Section 3.12.4, “Environmental Impacts and Mitigation Measures for NTMAs,” and Section 3.12.5, “Environmental Impacts, Mitigation Measures, and Mitigation Strategies for LTMA.”

Analysis Methodology

Impact evaluations were based on a review of the management actions proposed under the CVFPP, expressed as NTMAs and LTMA in this PEIR, to determine whether these actions could potentially result in impacts related to hazards and hazardous materials. NTMAs and LTMA are described in more detail in Section 2.4, “Proposed Management Activities.” The overall approach to analyzing the impacts of NTMAs and LTMA and providing mitigation is summarized below and described in detail in Section 3.1, “Approach to Environmental Analysis”; analysis methodology specific to hazards and hazardous materials is described below.

NTMAs can consist of any of the following types of activities:

- Improvement, remediation, repair, reconstruction, and operation and maintenance of existing facilities
- Construction, operation, and maintenance of small setback levees
- Purchase of easements and/or other interests in land
- Operational criteria changes to existing reservoirs that stay within existing storage allocations
- Implementation of the vegetation management strategy included in the CVFPP
- Initiation of conservation elements included in the proposed program

- Implementation of various changes to DWR and Statewide policies that could result in alteration of the physical environment

All other CVFPP activities fall within the LTMA category. NTMAs are evaluated using a typical “impact/mitigation” approach. Where impact descriptions and mitigation measures identified for NTMAs also apply to LTMAs, they are also attributed to the LTMA, with modifications or expansions as needed.

Implementation of the proposed program would result in construction-related, operational, and maintenance-related impacts from potential exposure of people or the environment to hazards and hazardous materials. Typical hazards consist of the risk of accidental release of hazardous materials during transport and/or use, and within one-quarter mile of schools; exposure to known and unknown hazardous materials during earth-moving activities; aviation safety hazards (including bird strike); increased risk of wildland fires; and increased potential for transmission of vector-borne diseases. (Another typical hazard, interference with emergency response and execution of emergency plans, is discussed in Section 3.19, “Transportation and Traffic.”)

Negligible to no effects related to hazards and hazardous materials are expected in the portion of the SoCal/coastal CVP/SWP service areas located outside of the Sacramento and San Joaquin Valley and foothills and the Sacramento and San Joaquin Valley watersheds because no program management activities are proposed in these areas; therefore, the SoCal/coastal CVP/SWP service areas are not discussed in detail in this section.

Thresholds of Significance

The following applicable thresholds of significance have been used to determine whether implementing the proposed program would result in a significant impact. These thresholds of significance are based on Appendix G of the CEQA Guidelines, as amended; slight modifications have been made to reflect the remote locations of many proposed activities where no sensitive receptors would be present in the vicinity. An impact related to hazards and hazardous materials is considered significant if implementation of the proposed program would do any of the following when compared against existing conditions:

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

- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school
- Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment
- Result in a safety hazard, including bird strike, for people residing or working in a project area that is located within 2 miles of a public airport or public-use airport, and/or result in a safety hazard for people residing or working in a project area that is located within the vicinity of a private airstrip
- 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
- Create public health hazards from new or increased exposure to vector-borne diseases by providing substantial new habitat for mosquitoes or other vectors

3.12.4 Environmental Impacts and Mitigation Measures for NTMAs

This section describes the physical effects of NTMAs related to hazards and hazardous materials. For each impact discussion, the environmental effect is determined to be either less than significant, significant, potentially significant, or beneficial compared to existing conditions and relative to the thresholds of significance described above. These significance categories are described in more detail in Section 3.1, “Approach to Environmental Analysis.” Feasible mitigation measures are identified to address any significant or potentially significant impacts. Actual implementation, monitoring, and reporting of the PEIR mitigation measures would be the responsibility of the project proponent for each site-specific project. For those projects not undertaken by, or otherwise subject to the jurisdiction of, DWR or the Central Valley Flood Protection Board (Board), the project proponent generally can and should implement all applicable and appropriate mitigation measures. The project proponent is the entity with primary responsibility for implementing specific future projects and may include DWR; the Board; reclamation districts; local

flood control agencies; and other federal, State, or local agencies. Because various agencies may ultimately be responsible for implementing, or ensuring implementation of, mitigation measures identified in this PEIR, the text describing mitigation measures below does not refer directly to DWR but instead refers to the “project proponent.” This term is used to represent all potential future entities responsible for implementing, or ensuring implementation of, mitigation measures.

Impact HHM-1 (NTMA): *Hazards from Routine Transport, Use, or Disposal and Reasonably Foreseeable Accidental Release of Hazardous Materials*

NTMAs include construction activities that would involve routinely transporting, using, and storing hazardous materials such as paints, solvents, cements, glues, lubricants, and fuels. Workers involved in construction and maintenance under the proposed program could be exposed to hazards and hazardous materials as a result of improper handling or use during construction activities; transportation accidents; or fires, explosions, or other emergencies. Workers also could be exposed to hazards associated with accidental releases of hazardous materials, which could adversely affect their health. The use, storage, and transport of hazardous materials are regulated by federal, State, and local agencies, and compliance with relevant laws is required during construction and operation under the proposed program.

As described in Section 3.12.2, “Regulatory Setting,” transportation of hazardous materials on area roadways is regulated by the CHP and Caltrans. State hazardous materials regulations are codified in CCR Titles 8, 22, and 26, and their enabling legislation is set forth in Chapter 6 (Section 25100 et seq.) of the California Health and Safety Code. These State regulations were established to ensure that projects implemented in California comply with federal regulations intended to reduce risks to human health and the environment from the routine use of hazardous substances. These regulations must be implemented as appropriate and are monitored by the State and/or local jurisdictions (e.g., Cal/OSHA in the workplace, DTSC for hazardous waste, and county departments of environmental health).

In addition, all construction contractors would be legally required to comply with the *State of California Multi-Hazard Mitigation Plan* (administered by CalEMA) and the Unified Program (administered by Cal/EPA). The provisions in the multihazard mitigation plan and Unified Program are intended to reduce losses caused by natural and human-caused hazards in California; describe current hazard mitigation activities; and include actions to reduce future losses.

Under existing conditions without the CVFPP, the current level of risk of major levee failure and flooding within the study area would remain. Flooding caused by a system failure in the State Plan of Flood Control could upset stored hazardous materials and spread pesticides, oil, gasoline, and other hazardous materials in floodwaters, creating localized or widespread hazardous conditions for the public and environment. However, the CVFPP is intended to substantially reduce the risk of flood damage, thereby also reducing the risk of accidental spills of hazardous materials from flood events.

As described above, implementation of the proposed NTMAs would comply with federal and State regulations, policies, and laws related to routine transport, use, disposal, and reasonably foreseeable accidental release of hazardous materials. Compliance with these regulations, policies, and laws would ensure that NTMAs would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, or through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. Therefore, this impact would be **less than significant**. No mitigation is required.

Impact HHM-2 (NTMA): Accidental Release and Use of Hazardous Materials within One-Quarter Mile of an Existing or Proposed School

Under PRC Section 21151.4, unless certain conditions are first met, an EIR or mitigated negative declaration may not be certified or adopted for a project within one-quarter mile of a school if the project would involve constructing or altering facilities that meet any of the following criteria:

- Might reasonably be anticipated to emit hazardous air emissions
- Would handle an extremely hazardous substance or a mixture containing extremely hazardous substances in a quantity equal to or greater than the State threshold quantity specified in Section 25532(j) of the California Health and Safety Code
- May pose a health or safety hazard to persons who would attend or would be employed at the school

For an EIR to be certified or mitigated negative declaration to be adopted for such a project, both of the following must have already occurred:

1. The lead agency preparing the EIR must have consulted with the school district with jurisdiction about the potential impact of the project on the school.

2. The school district must have been notified about the project in writing at least 30 days before the proposed certification of the EIR or adoption of the mitigated negative declaration.

Schools located in the Sacramento and San Joaquin Valley and foothills, the Delta and Suisun Marsh, and the Sacramento and San Joaquin Valley watersheds are shown in Figure 3.12-2. Implementing the proposed program would involve using hazardous substances such as paints, solvents, cements, glues, lubricants, and fuels. Site-specific geographic locations for the NTMAs, however, cannot be determined for this PEIR. Therefore, it cannot be ascertained at this time whether any NTMAs would occur within one-quarter mile of an existing or proposed school. Given the large number of schools and their widespread distribution within the study area, and to be conservative for CEQA purposes, this analysis assumes that NTMAs entailing the use of hazardous materials could be implemented within one-quarter mile of an existing or proposed school. Thus, this impact would be **potentially significant**.

Mitigation Measure HHM-2 (NTMA): *Conduct a Site-Specific Analysis to Determine the Proximity of School Sites, Notify and Consult with Affected Schools, and Implement Storm Water Pollution Prevention Plan and Best Management Practices as Required*

The project proponent will determine whether the site of any existing or proposed school is located within one-quarter mile of each site-specific NTMA that would require construction activities. If no school sites are located within this distance, no further mitigation is required. If existing or proposed schools are located within one-quarter mile, the project proponent will notify each affected school (or the school district in which the school is located) in writing, and will consult with appropriate school or district personnel about the types of activities that would occur and their estimated timing. The project proponent will provide examples of the types of hazardous materials that could be used during proposed activities. The written notification will be provided at least 30 days before the commencement of any construction activities within one-quarter mile of the school or at least 30 days before any future project-specific CEQA document is certified or adopted, whichever is earlier.

The project proponent will also be required by law to design and implement spill prevention and cleanup measures (i.e., best management practices (BMPs)) as part of the storm water pollution prevention plan (SWPPP) prepared for each site-specific NTMA (see Section 3.13, “Hydrology,” for a discussion of relevant BMPs and the SWPPP process), which would help to reduce the potential for adverse impacts during project construction.

Implementing this mitigation measure in combination with the legally required SWPPP and associated BMPs and compliance with other regulations, guidelines, and laws related to hazardous materials use, handling, transport, and disposal would reduce Impact HHM-2 (NTMA) to a **less-than-significant** level.

Impact HHM-3 (NTMA): *Exposure of People and the Environment to Existing Hazardous Materials, Including Sites on the Cortese List*

Before urbanization occurred, the study area was historically used extensively for agricultural purposes, and these agricultural practices continue in many locations. Agricultural land use typically involves applying pesticides and herbicides and using hazardous substances (e.g., fuels and lubricants) for operation and maintenance of agricultural equipment. The residues of these substances may remain in soils for years. In addition, agricultural land uses often require wells, underground piping that could contain asbestos, underground storage tanks, and septic systems that could become a hazard if encountered during construction activities. Urbanized areas where some NTMAs would be required also contain land uses where hazardous substances are routinely used, such as gas stations, dry cleaners, and various industrial activities. As shown in Figure 3.12-1, sites included on the Cortese List that are known to contain hazardous materials are scattered throughout the study area. The study area also contains aboveground and underground utility infrastructure, such as water, gas, and fuel pipelines, and transmission lines that may contain hazardous materials. Oil and gas wells and transmission lines are located beneath the Sacramento and San Joaquin valleys and the Delta and Suisun Marsh. The locations of two large abandoned oil pipelines that traverse the study area are shown in Figure 3.12-5. Earth-moving activities could encounter soil contaminated during agricultural and urban activities or infrastructure containing hazardous materials, which could expose people or the environment to hazardous materials. Therefore, this impact would be **potentially significant**.

Mitigation Measure HHM-3a (NTMA): *Search for Contaminated Sites Potentially Affected by Site-Specific Projects and Avoid Contact with or Clean Up Contaminated Areas*

Before construction begins on any site-specific project that involves earth-moving activities, a Phase I Environmental Site Assessment (ESA) will be completed. An existing Phase I ESA can be used to complete this requirement if it covers the project area and has been completed within 5 years of initiation of the project's environmental analysis, and land uses on the project site have not changed since completion of the Phase I ESA that would alter the potential for contamination to be present. The Phase I ESA

will include a database search to determine whether site-specific work would take place within the boundary of any facilities included on the Cortese List or other recorded contaminated or potentially contaminated sites. If so, the project proponent will do one of the following:

1. Coordinate with the appropriate federal, State, or local agency to determine whether the contamination issue has been resolved by the responsible party. OR
2. Determine whether a qualified hazardous materials specialist has found, through soil and groundwater testing, that previously documented contamination would be sufficiently distant from project construction areas to ensure that the site's known hazardous materials would not be encountered or threaten the safety of construction workers, the public, or the environment.

However, if evidence of existing contamination is found on the site, the nature of this contamination will be evaluated in the Phase I ESA and appropriate action will be recommended. Such action may involve further study through completion of a Phase II ESA. If the contamination is sufficient to exceed applicable regulatory thresholds, then the project proponent will ensure cleanup of the site, consistent with regulatory requirement. Cleanup of contaminated sites will be completed before construction is initiated in the contaminated location. In the case of projects that could put the contaminated site in contact with surface waters, cleanup will be completed before levees or other features are modified in a manner that would allow surface waters to reach the contaminated site.

Mitigation Measure HHM-3b (NTMA): Locate Oil and Gas Wells and Transmission Lines Potentially Affected by Site-Specific Projects, and Coordinate with Owner/Operators to Avoid Disturbance

Before construction begins on any site-specific project, the project proponent will search appropriate State and local databases to determine whether any oil or natural gas wells or transmission pipelines are located within the specific project site. If any wells or pipelines are found, the project proponent will notify and coordinate with the owner/operators of the wells and pipelines to ensure that such facilities are properly flagged in the field and avoided during construction.

Mitigation Measure HHM-3c (NTMA): Train Construction Workers on Hazardous Materials, Stop Work Near Contaminated Soils, and Determine and Implement an Avoidance or Cleanup Strategy

Before construction begins on any site-specific project, the project proponent will train construction workers on the potential to encounter

hazardous materials and proper notification procedures. Such training will specify that work in the vicinity must cease and a qualified hazardous materials specialist must be consulted if stained or odorous soils; underground storage tanks; or abandoned or closed wells, mines, or septic systems are encountered. The project proponent will also notify the appropriate federal, State, and/or local agencies. A variety of steps may be taken at the discretion of the project proponent. Among those steps are the following:

- Avoid the area containing the stained/odorous soils or infrastructure.
- Perform a Phase I ESA to determine the nature, extent, and level of hazard to the public and construction workers if construction needs to occur in the exact location of the soils or infrastructure.
- Clean up the area or coordinate with the owner of the affected parcel to perform cleanup activities.

Should the project proponent elect to clean up activities on its own, all hazardous substances encountered will be removed and properly disposed of by a licensed contractor in accordance with federal and State regulations.

Implementing these mitigation measures would reduce Impact HHM-3 (NTMA) to a **less-than-significant** level.

Impact HHM-4 (NTMA): *Creation of Safety Hazards, Including Bird Strike, in the Vicinity of a Public or Private Airstrip*

The NTMAs would not entail constructing any tall buildings or structures that could interfere with flight patterns or affect operations at a public or private airstrip.

However, as discussed previously in Section 3.12.1, “Environmental Setting,” the study area provides habitat for several groups of bird species that can be hazardous to aviation if damage results from high-speed collisions with birds, entry of birds into aircraft engines, or both. Damage or potential damage caused by birds and other wildlife is termed a “strike” or “strike hazard.” FAA enforces 14 CFR Part 139, which prescribes rules regarding operation of airports used by aircraft with seating capacity of more than 30 passengers. An ecological study must be prepared and submitted to FAA when multiple birds or other wildlife are struck by aircraft or enter into aircraft engines, or when the number of birds or other wildlife present in an airport flight pattern is sufficient to result in such hazards. FAA determines whether a wildlife hazard management plan is needed.

FAA Advisory Circular *Hazardous Wildlife Attractants on or Near Airports* (2007) provides guidance on where to locate certain land uses that have the potential to attract hazardous wildlife to or near public-use airports. FAA recommends maintaining the following separations when siting water-related land uses that may attract hazardous wildlife (FAA 2007):

- 5,000 feet from airports serving piston-powered aircraft
- 10,000 feet from airports serving turbine-powered aircraft
- 5 statute miles from airports where the wildlife attractant may cause hazardous wildlife movement into or across the approach or departure airspace

Section 3.6, “Biological Resources—Terrestrial,” provides additional information about bird species that are likely to occur within the study area, and a discussion of the types of birds that generally pose the greatest aviation hazard is provided in Section 3.12.1, above. The proposed NTMAs include the potential for floodplain and habitat expansions that could increase or enhance habitat for some of the groups of birds that are categorized as hazardous wildlife for their potential to collide with aircraft. Figure 3.12-3 identifies the locations of major airports and airstrips in the study area. (Small community airports and private local airstrips are too numerous to include in this figure.)

Site-specific geographic locations for NTMAs are not proposed as part of this PEIR; therefore, it cannot be ascertained with certainty at this time whether NTMAs would occur close enough to airstrips for increased bird strikes to present a hazard. NTMAs could modify river channels, levees, and floodways to reestablish an active floodplain that receives overbank flows. During these flooding events, attraction of some groups of hazardous wildlife (e.g., waterfowl, shorebirds, and gulls) would likely increase. However, greater attraction of other groups of hazardous wildlife (e.g., blackbirds and starlings, corvids, and columbids) is less likely, and attraction of these groups may even decrease. However, to be conservative for purposes of CEQA, this analysis assumes that implementing some NTMAs could create increased habitat that would attract hazardous wildlife near an airport. Thus, this impact would be **potentially significant**.

Mitigation Measure HHM-4 (NTMA): *Prepare Site-Specific Impact Assessments and, If Necessary, Coordinate with Affected Airport(s) to Prepare and Implement Wildlife Hazard Management Plan(s)*

Future CEQA documents related to the proposed program will include analyses of bird strike hazards in those situations where NTMAs would increase the amount of bird habitat or the amount of inundated floodplain within the following distances:

- 5,000 feet from airports serving piston-powered aircraft
- 10,000 feet from airports serving turbine-powered aircraft
- 5 statute miles from airports where the wildlife attractant may cause hazardous wildlife movement into or across the approach or departure airspace

Each analysis will consider the size of the airport, the species of birds likely to be present near the proposed improvements, the proximity to any known migratory bird corridors (e.g., the Pacific Flyway), and the number of previously documented bird-strike incidents at the airport (if any). The analysis will determine whether the project-related increase in bird habitat would be substantial compared to existing bird habitat that is already present in the airport vicinity.

If the results of the site-specific analysis determine that the impact would be significant, the project proponent will consult and coordinate with the affected airport operator to determine whether a wildlife hazard management plan is required. If required, the project proponent will coordinate with the affected airport to prepare and implement such a plan pursuant to 14 CFR Part 139. The wildlife hazard management plan will identify the hazardous wildlife attractants on or near the airport, the appropriate damage management techniques to minimize the wildlife hazard, and prioritize the management measures. The plan will be prepared in consultation with a wildlife biologist. Bird control techniques may include but are not limited to maintaining grass at a height of less than 8 inches, preventing growth of large emergent plants (e.g., cattails), installing barriers between water features and nearby vegetated areas, installing signs prohibiting feeding of birds, removing nesting materials, and hazing birds to discourage them from using water features.

Implementing this mitigation measure would reduce Impact HHM-4 (NTMA) to a **less-than-significant** level.

Impact HHM-5 (NTMA): *Exposure to Substantial Hazard from Wildland Fires*

As shown in Figure 3.12-4, much of the study area is designated as an unzoned Fire Hazard Severity Zone. Criteria used to identify the Fire

Hazard Severity Zones indicate that there is no constraint to reducing risks associated with wildland fires in unzoned fire hazard areas.

However, the portions of the study area located in the Sierra Nevada foothills are designated as Moderate Fire Hazard Severity Zones. At the higher elevations of the Sierra Nevada along major river drainages, which make up a very small portion of the study area, construction activities could occur in areas designated as High or Very High Fire Hazard Severity Zones. Operating construction equipment could spark a wildland fire, particularly in the High or Very High Fire Hazard Severity Zones.

Fire Hazard Severity Zones are distinguished by the various mitigation strategies that need to be applied to reduce risks associated with wildland fires. The maps produced by CAL FIRE's Fire and Resource Assessment Program were prepared using data and models that describe development patterns and potential fuels over a 30-year growth horizon. The maps indicate burn probabilities to quantify the likelihood of wildland fire and the nature of exposure of new structures built in designated fire hazard zones. The High and Very High Fire Hazard Severity Zones differ from the Moderate Fire Hazard Severity Zone in that one or more of the criteria used to identify the zones (e.g., access, topography, vegetation, and water) pose more of a constraint in the in the High or Very High zones than in the Moderate zone.

Because a portion of the study area is located in a High or Very High Fire Hazard Severity Zone, construction activities could pose a threat of wildland fire in these areas. However, OSHA's fire protection and prevention standard (29 CFR 1926.150, Subpart F) requires an "employer ... [to] be responsible for the development of a fire protection program to be followed throughout all phases of the construction and demolition work, and ... [to] provide for the firefighting equipment as specified.... As fire hazards occur, there will be no delay in providing the necessary equipment." Because the project proponent would be required to comply with the elements of OSHA's fire protection and prevention standard during all phases of construction for all future site-specific projects, the potential for construction associated with NTMAs to spark an uncontrollable wildland fire is considered remote. Therefore, this impact would be **less than significant**. No mitigation is required.

Impact HHM-6 (NTMA): *Increased Human Health Hazards Associated with Vector-Borne Diseases*

Local vector control districts throughout the Central Valley implement mosquito control programs, which focus primarily on spraying chemicals and educating the public about the need to eliminate bodies of standing

water. In general, spraying programs are targeted toward more populated areas rather than sparsely populated rural areas. NTMAs would be implemented in portions of the study area located near water bodies such as rivers and creeks in the Central Valley and the Sierra Nevada. Activities in these areas would subject workers to increased risk of exposure to West Nile virus and other mosquito-borne diseases because of their proximity to mosquito breeding habitat. Additionally, mosquito breeding habitat could increase or be enhanced by purchasing easements, placing additional lands in floodways as part of setback levee projects, creating aquatic habitat as part of implementation of the Central Valley Flood System Conservation Strategy, and changes to water volumes and the timing of water flows from reservoirs. Increases in the overall extent of calm, standing water in dense vegetation from various NTMAs could also enhance habitat for mosquitoes. Therefore, this impact would be **potentially significant**.

Mitigation Measure HHM-6 (NTMA): *Implement Workplace Precautions against Vector-Borne Diseases and Coordinate with and Support Local Vector Control District Programs*

The project proponent will implement the following workplace precautions against vector-borne diseases at the construction sites of future site-specific projects:

- Conduct construction worker personnel training that covers the potential hazards and risks associated with exposure to and protection from vector-borne diseases such as West Nile virus. Instruct personnel in the use of proper construction apparel and warn them against handling any dead animals (particularly birds) with bare hands.
- Inspect work areas and eliminate sources of standing water that could provide breeding habitat for mosquitoes. For example, eliminate uncovered, upright containers that could accumulate water, and fill or drain potholes or other areas where water is likely to accumulate.
- Provide insect repellent for worker use at construction sites. As recommended by the Centers for Disease Control and Prevention (CDC), the insect repellent should contain active ingredients that have been registered with EPA for use as insect repellents on skin or clothing such as diethyl-meta-toluamide (DEET) or picaridin (KBR 3023) (CDC 2010).
- Notify the appropriate city or county health department about dead birds found at any project site.

In addition, the project proponent will coordinate with and support local vector control districts in implementing their vector control activities at the time of future site-specific projects, as appropriate and feasible. Support will include but will not be limited to the following actions:

- Inform the appropriate vector control district about implementation of site-specific projects. Provide information requested to support vector control activities along waterways affected by those site-specific projects in a manner that could increase exposure to vector-borne diseases.
- Implement applicable BMPs from the DPH publication entitled *Best Management Practices for Mosquito Control on California State Properties* (DPH 2008).

Implementing this mitigation measure in combination with control and public outreach programs implemented by local vector control districts would reduce Impact HHM-6 (NTMA) to a **less-than-significant** level.

3.12.5 Environmental Impacts, Mitigation Measures, and Mitigation Strategies for LTMA

This section describes the physical effects of LTMA related to hazards and hazardous materials. LTMA include a continuation of activities described as part of the NTMA and all other actions included in the proposed program, and consist of all of the following types of activities:

- Widening floodways (though setback levees and/or purchase of easements)
- Constructing weirs and bypasses
- Constructing new levees
- Changing operation of existing reservoirs
- Achieving protection of urban areas from a flood event with 0.5 percent risk of occurrence
- Changing policies, guidance, standards, and institutional structures
- Implementing additional and ongoing conservation elements

Actions included in the LTMA are described in more detail in Section 2.4, "Proposed Management Activities."

Impacts and mitigation measures identified above for NTMAs would also be applicable to many of the LTMAAs and are identified below. The NTMA impact discussions and mitigation measures are modified or expanded where appropriate, or new impacts and mitigation measures are included if needed, to address conditions unique to LTMAAs. The same approach to future implementation of mitigation measures described above for NTMAs and the use of the term “project proponent” to identify the entity responsible for implementing mitigation measures also apply to LTMAAs.

LTMA Impacts and Mitigation Measures

Impact HHM-1 (LTMA): Hazards from Routine Transport, Use, or Disposal and Reasonably Foreseeable Accidental Release of Hazardous Materials

This impact would be similar to Impact HHM-1 (NTMA), described above. Implementation of the proposed LTMAAs would comply with federal and State regulations, policies, and laws related to routine transport, use, disposal, and reasonably foreseeable accidental release of hazardous materials. Therefore, this impact would be **less than significant**. No mitigation is required.

Impact HHM-2 (LTMA): Accidental Release and Use of Hazardous Materials within One-Quarter Mile of an Existing or Proposed School

This impact would be similar to Impact HHM-2 (NTMA), described above. Program implementation would involve using hazardous substances such as paints, solvents, cements, glues, lubricants, and fuels. Site-specific geographic locations for the LTMAAs cannot be determined for this PEIR, however. Therefore, it cannot be ascertained at this time whether any LTMAAs would occur within one-quarter mile of an existing or proposed school. Given the large number of schools and their widespread distribution within the study area, and to be conservative for CEQA purposes, this analysis assumes that LTMAAs entailing the use of hazardous materials could be implemented within one-quarter mile of an existing or proposed school. Thus, this impact would be **potentially significant**.

Mitigation Measure HHM-2 (LTMA): Implement Mitigation Measure HHM-2 (NTMA)

Implementing this mitigation measure in combination with the legally required SWPPP and associated BMPs would reduce Impact HHM-2 (LTMA) to a **less-than-significant** level.

Impact HHM-3 (LTMA): Exposure of People and the Environment to Existing Hazardous Materials, Including Sites on the Cortese List

This impact would be similar to Impact HHM-3 (NTMA), described above. The potential exists for earth-moving activities associated with LTMA to encounter soil that has been contaminated from agricultural activities or infrastructure containing hazardous materials. Encountering such contaminated soil or infrastructure could expose people or the environment to hazardous materials. Therefore, this impact would be **potentially significant**.

Mitigation Measure HHM-3a (LTMA): *Implement Mitigation Measure HHM-3a (NTMA)*

Mitigation Measure HHM-3b (LTMA): *Implement Mitigation Measure HHM-3b (NTMA)*

Mitigation Measure HHM-3c (LTMA): *Implement Mitigation Measure HHM-3c (NTMA)*

Implementing these mitigation measures would reduce Impact HHM-3 (LTMA) to a **less-than-significant** level.

Impact HHM-4 (LTMA): *Creation of Safety Hazards, Including Bird Strike, in the Vicinity of a Public or Private Airstrip*

This impact would be similar to Impact HHM-4 (NTMA), described above. Site-specific geographic locations for LTMA are not proposed as part of this PEIR; therefore, it cannot be ascertained with certainty whether LTMA would occur close enough to airstrips for increased bird strikes to present a hazard. LTMA could create areas where habitat conditions would be attractive to some groups of hazardous wildlife (e.g., waterfowl, shorebirds, and gulls), and occurrences of this hazardous wildlife would likely increase. However, greater attraction of other groups of hazardous wildlife (e.g., blackbirds and starlings, corvids, and columbids) is less likely, and attraction of these groups may even decrease. However, to be conservative for purposes of CEQA, this analysis assumes that implementing LTMA could create increased habitat that would attract hazardous wildlife near an airport. Thus, this impact would be **potentially significant**.

Mitigation Measure HHM-4 (LTMA): *Implement Mitigation Measure HHM-4 (NTMA)*

Implementing this mitigation measure would reduce Impact HHM-4 (LTMA) to a **less-than-significant** level.

Impact HHM-5 (LTMA): *Exposure to Substantial Hazard from Wildland Fires*

This impact would be similar to Impact HHM-5 (NTMA), described above. Because portions of the study area would be located in a High or Very High Fire Hazard Severity Zone, construction activities could pose a threat of wildland fire. However, OSHA's fire protection and prevention standard (29 CFR 1926.150, Subpart F) requires an "employer ... [to] be responsible for the development of a fire protection program to be followed throughout all phases of the construction and demolition work, and ... [to] provide for the firefighting equipment as specified.... As fire hazards occur, there will be no delay in providing the necessary equipment." Because DWR would be required to comply with the elements of OSHA's fire protection and prevention standard during all phases of construction for all future site-specific projects, the potential for construction associated with LTMA's to spark an uncontrollable wildland fire is considered remote. Therefore, this impact would be **less than significant**. No mitigation is required.

Impact HHM-6 (LTMA): *Increased Human Health Hazards Associated with Vector-Borne Diseases*

This impact would be similar to Impact HHM-6 (NTMA), described above. LTMA's would be implemented in portions of the study area located near water bodies such as rivers and creeks in the Central Valley and the Sierra Nevada foothills. Activities in these areas would subject workers to increased risk of exposure to West Nile virus and other mosquito-borne diseases because of their proximity to mosquito breeding habitat. Additionally, mosquito breeding habitat could increase or be enhanced with changes to the occurrence or overall extent of calm, standing water in dense vegetation resulting from some LTMA's. Therefore, this impact would be **potentially significant**.

Mitigation Measure HHM-6 (LTMA): *Implement Mitigation Measure HHM-6 (NTMA)*

Implementing this mitigation measure in combination with control and public outreach programs implemented by local vector control districts would reduce Impact HHM-6 (LTMA) to a **less-than-significant** level.

LTMA Impact Discussions and Mitigation Strategies

The impacts of the proposed program's NTMA's and LTMA's related to hazards and hazardous materials and the associated mitigation measures are thoroughly described and evaluated above. The general narrative descriptions of additional LTMA impacts and mitigation strategies for those impacts that are included in other sections of this draft PEIR are not required for hazards and hazardous materials.