Chapter 24
Hazards and Hazardous Materials

This chapter discusses existing characteristics in the Plan Area and Areas of Additional Analysis (described in Chapter 1, *Introduction*) as they pertain to hazards and hazardous materials; regulations applicable to the use, storage, and disposal of hazardous materials; the potential effects on the public and the environment from hazards and hazardous materials associated with implementation of the proposed alternatives; and potential mitigation measures to reduce the severity of these effects.

24.1 Environmental Setting/Affected Environment

24.1.1 Potential Environmental Effects Area

This section discusses the hazards and hazardous materials study area (the area in which impacts may occur) which consists of the Plan Area (the area covered by the BDCP), which is largely formed by the statutory borders of the Delta, along with areas in Suisun Marsh and the Yolo Bypass; and Areas of Additional Analysis.

The study area is primarily an inland delta, and consists of lowlands and wetlands formed by the confluence of the Sacramento and San Joaquin Rivers and other tributaries. Surficial sediments, described in Chapter 9, *Geology and Seismicity*, are generally Quaternary-age, with older sediments extending to depths of at least 9,000 feet. These deeper sedimentary units contain petroleum reserves, and oil and natural gas are produced (analyzed further in Chapter 26, *Mineral Resources*).

The Delta is characterized as a multi-use landscape, with agriculture accounting for approximately 75% of land use within the study area. Other land uses include industrial/manufacturing, transportation, recreation, habitat conservation, and residential, as described in Chapter 13, *Land Use*. The built environment of the study area contains a variety of roads, transportation facilities, waterways and canals, utilities, petroleum production and processing facilities, urban lands, and other structures. As described in Chapter 19, *Transportation*, the study area is home to several major transportation arteries, such as Interstate (I-) 5 and other highways in the region. Shipping centers include the Ports of Sacramento and Stockton, and several national and regional railroads operate within the study area.

A discussion of historical and existing land uses with the potential to result in hazardous conditions is provided below, in the Hazardous Materials section.

The Delta contains rich wetlands, fertile soil, and an abundant variety of plant and animal life. The availability of fresh water and arable land has resulted in most of the Delta's conversion to farm land. The study area's hydrologic characteristics are typical of lowlands with shallow groundwater and a system of gaining and losing streams. A detailed description of the study area's hydrogeologic setting is provided in Chapter 7, *Groundwater*.

24.1.2 Potential Hazardous Materials in the Study Area

This section describes naturally occurring and anthropogenic hazards in the study area. Historic agricultural, industrial and urban/recreational activities in the study area and, in some cases, upstream of the study area, have resulted in the presence of hazardous materials in soils, sediments, and groundwater in the study area. Additionally, current agricultural, industrial, urban, and recreational activities (e.g., boating) within the study area use and introduce hazardous materials (e.g., pesticides, fertilizers, industrial waste). Further, infrastructure, such as crude oil and natural gas pipelines, is present throughout the study area. These materials have the potential to be released into the environment during the construction and operational phases of the proposed alternatives. Specific types of hazards and hazardous materials are discussed in greater detail below.

24.1.2.1 Naturally Occurring Hazards

Historic geologic conditions in the study area have led to the formation of peat and other organic soils with thicknesses of up to approximately 55 feet on the western side of the Delta; peat deposits are not commonly found on the eastern side. The thick organic soils and peat have the potential to generate flammable gases such as methane that can pose hazards to workers during deep excavations and tunneling. In addition, petroleum deposits underlying the study area could result in the migration of oil and/or natural gas from deep reservoirs into shallow strata that may be disturbed during construction. Additional information on organic soils and oil and gas deposits in the study area are provided in Chapter 9, *Geology and Seismicity*; Chapter 10, *Soils*; and Chapter 26, *Mineral Resources*.

Much of the study area consists of lowlands capable of supporting insects such as mosquitos, which can be vectors for infectious diseases. The potential hazards associated with vector-borne diseases are discussed in Chapter 25, *Public Health*.

24.1.2.2 Hazards from Agricultural Practices

Agriculture has been the primary land use in the study area for more than a century. As described in Chapter 13, *Land Use*, approximately 538,000 acres of the 738,000 acres of the study area are used for agriculture.

A wide variety of pesticides, including insecticides, herbicides, and fungicides, have been used throughout the study area for decades, and may be present in and near agricultural lands. Table 24-1 provides an evaluation of the pesticides used most prevalently in 1974 and 2008 and the crops with which they were associated. While some pesticides that were used in 1974 were still in use in 2008 (e.g., sulfur, petroleum oils, 1,3-dichloropropene, diuron, and carbaryl), a number of new pesticides, such as chloropicrin, chlorpyrifos and propanil, are available and in use currently. Notably, a number of pesticides prevalently used in the 1970s are no longer prevalently used: dinoseb, chlordane, dibromochloropropane (DBCP), ethylene dibromide, parathion, and toxaphene.

1 **Table 24-1. Pesticides and Crop Associations in 1974 and 2008**

Pesticide/Crop	Rice, Corn, Barley,	Hay	Fruit Trees	Grapes	Other Fruits	Nuts	Beans (Dry)	Vegetables	Pasture and Rangeland	Seed Crops
1,3 Dichloropropene			●	❖		●		●		
2,4-D, all formulations	●	❖	●		❖	●		●	●	
Azinphos-methyl			□			□		□		
Captafol	❖		❖			❖		❖		
Carbaryl	●	❖	●	□	□	●		●	❖	
Chlordane, all formulations	❖		❖	❖	❖		❖	❖		
Chloropicrin			□		□	□		□		
Chlorpyrifos	□	□	□			□		□		□
Copper, inorganic and organic complexes	●	●	●	●	●	●	❖	●	❖	
DBCP, all formulations	❖	❖	❖	❖		❖	❖	❖		
Dicofol	❖	❖	●	●	❖	●	●	❖		
Dinoseb, all	❖	❖		❖	❖		❖	❖		
Diuron	□	●	□	□		●			●	
Endosulfan	●		❖	❖	❖			●		
Ethylene dibromide					❖			❖		
Glyphosate, all complexes	□	□	□	□	□	□	□	□	□	□
Kaolin			□		□	□		□		
Lime-sulfur			●	●		●				
Malathion	●	❖	❖		●	●	❖	●	❖	
Mancozeb			□		□			□		
Metam-sodium	□			□				□		□
Methomyl	□	□		●	●			●		
Methyl bromide	●		●			●	●	●		
Mineral Oil			●	●		●		❖		
Molinate	●									
Oryzalin			□	□		□				
Oxyfluorfen	□	□		□		□	□	□		
Paraquat dichloride	●		●	●	●	●		●		●
Parathion	❖	❖	❖	●	❖	❖	❖	❖	❖	
Pendimethanlin		□	□			□	□	□		
Petroleum oils, all	●	●	●	❖	●	●	❖	●		●
Potassium n-methyldithiocarbamate					□			□		
Propanil	□									
Propargite	□	□		□		□	□			
Propylene oxide						□				
S-Metolachlor	□	□					□	□		□
Sulfur	●		●	●	❖	●	❖	●		
Sulfuryl fluoride	●					●				
Toxaphene	❖	❖	❖		❖		❖	❖		
Trifluralin	□		□			□	□	□		□
Xylene	❖	❖	❖	●	❖	●	❖	●	❖	

Source: California Department of Pesticide Regulation 2010.

❖ = indicates use in 1974

□ = indicates use in 2008 only

● = indicates use in both years

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The wide variety of pesticides that has been applied, the numerous crops grown in the region, and the fact that predominant land use across the Delta supports agriculture indicate that pesticides and their residues are likely to be found in the soils throughout the Delta. While organochlorines, arsenates, and mercury compounds are the most persistent, chemicals that have been widely and historically applied (e.g., DBCP) may also continue to persist within the soils. Because of their relatively low water solubility, persistent pesticides and compounds generally accumulate in the environment in sediment and soil, as well as in the fatty tissue of terrestrial and aquatic animals and humans. Human exposure to organochlorine pesticides is primarily through diet consisting of fatty foods, such as meat, fish, poultry, and dairy products. Studies have indicated that organochlorine pesticides are endocrine disruptors, neurotoxicants, and carcinogens (Verreault et al. 2004; Sagiv et al. 2010; Kleanthi et al. 2008). Arsenic is also found in certain pesticides, fertilizers, and feed additives used in commercial agricultural operations (Saracino-Kirby 2000; U.S. Environmental Protection Agency 2009). The effects of exposure to any hazardous substance depend on many variables, including the dose, duration and route of exposure.

No comprehensive area-wide soil or sediment sampling program is known to have been conducted to evaluate pesticide residues from agricultural use. Further discussion of the fate, transport, and bioaccumulative properties of pyrethroid, organochlorine, and organophosphate pesticides that have been applied to study area crops is provided in Chapter 8, *Water Quality.*

Pesticide and fertilizer supply companies, including facilities that sell, store, concentrate, dilute, or distribute agricultural chemicals, are present throughout the Delta. These facilities may be large-volume supply businesses that have large tanks with thousands of gallons of these agricultural chemicals, which are sold to farmers or distributors for local use. These facilities may also be farm-level batch plants, which take the raw material from a supply yard or tanker and temporarily store the material prior to loading into distribution equipment. The main difference between a supply business and a batch plant is the volume and duration of storage. Another important distinction is that supply businesses often have extensive spill-containment equipment and specially trained staff. A batching operation is often less sophisticated regarding spill containment. A farmer may or may not have specific training for handling these chemicals.

In addition to the activities in the agriculture environs that generate hazards from pesticides, herbicides and fertilizers, there are, other activities associated with farming that can generate hazardous materials. Most farming properties have land that is not engaged directly in crop production. These areas may contain a barn formerly used for working animals but more commonly used now for equipment storage and maintenance. These areas often contain both aboveground and underground storage tanks (AST, UST) for various materials used in the operations of the farm. In addition to the pesticides, herbicides, and fertilizers discussed previously, storage of petrochemical products is prevalent. Farms also have a waste disposal area, where waste crop material may be stored for later offsite disposal, composting, or final disposal. These areas often contain drums of lubricants, agricultural chemicals, or any other item that a farmer might wish to discard.

Most farms also have an area where their product is either stored or processed onsite prior to offsite shipping for consumptive use. The study area has a wide variety of processing facilities related to the variety of crops grown there (e.g., pears and asparagus). Contaminants of concern for these types of properties vary, but are primarily limited to pesticides, herbicides, fertilizers, and chemicals for maintaining farm equipment (e.g., solvents, grease, oil, gasoline). The waste disposal areas may have petroleum products (e.g., waste materials from equipment maintenance) or agricultural chemicals (spillage from containers containing residual volumes of chemicals such as pesticides).

Health studies of petroleum products have shown effects on lungs, the central nervous system, the immune system, reproduction, skin, and eyes (Agency for Toxic Substances and Disease Registry 1999). The effects of exposure to any hazardous substance depend on many variables, including the dose, duration and route of exposure.

24.1.2.3 Hazards from Oil and Gas Production and Processing

Active oil and gas extraction fields are present throughout the Delta. Petroleum production throughout the study area mainly consists of natural gas extraction, though minor quantities of crude oil and condensate are also produced.

Petroleum production has occurred in the study area at least since the discovery of the Rio Vista gas field in 1936. Approximately 3,400 oil and gas wells have been drilled throughout the study area; many of these wells are present along the proposed water conveyance facilities alignments under consideration for the BDCP alternatives (Department of Conservation 2010). Oil and natural gas production emits benzene, toluene, ethylbenzene, and xylenes (BTEX compounds) as well as n-hexane and other volatile organic compounds. Exposure to these compounds in the short-term can result in nose, throat, eye, skin and gastric irritation, nausea, vomiting and neurological effects. Chronic exposure can result in blood disorders, birth defects, developmental disorders, neurological effects, respiratory problems, and cancer (U.S. Environmental Protection Agency 2011a). The locations of active wells can be determined with relative ease; however, older oil and gas wells may have been abandoned or shut-in without highly detailed location data. Chapter 26, *Mineral Resources*, provides the locations of known oil and gas wells drilled throughout the study area.

Petroleum processing facilities include a wide range of facilities and equipment that generally fall into two categories: in-field facilities and pipeline/transport facilities. In-field facilities enhance petroleum and gas extraction and distribution (or storage) prior to linkage to larger regional pipelines. In-field facilities contain equipment that may be used for a specific well or set of wells, or may include sub-regional or regional facilities that service a wide area. Pipeline/transport facilities contain pump stations, pressure regulation equipment, or storage tanks used to facilitate the orderly feed of petroleum gathered from individual wells into a larger pipeline for transport to a refinery.

Historic oil and gas well fields may include areas that may have contaminated soil and/or groundwater. In addition to production facilities, an active producing well field may have areas used during exploration that may result in soil or groundwater contamination. For example, during typical drilling activities, mud pits have served as surface impoundments for drilling fluids that can contain hazardous materials (e.g., cadmium, mercury, chromium, naphthalene, and fluorine), resulting in a potential source of contamination. Drilling fluids often contain petroleum compounds in both raw (crude) form and refined form (drilling enhancement additives). Generally, mud pits are a series of open tanks, usually made of steel plates, through which the drilling mud is cycled to allow sand and sediments to settle out. Former mud pits, although usually lined, may be a historic source for hydrocarbon contamination.

Other oil and gas exploration and production activities that can release hazardous materials into the environment where they may be encountered during excavation or construction include drilling, production, treatment and temporary storage areas, piping to gathering points, and storage and shipment to refineries and processing facilities. Petroleum facilities include pump stations, pressure regulation equipment, or storage tanks used to facilitate the orderly feed of petroleum gathered from individual wells into a larger pipeline for transport to a refinery. Figure 24-1 displays the

locations of known oil and gas processing facilities in the study area for which sufficient data were available.

Additionally, active, abandoned, and shut-in oil and gas wells may be present in areas where excavation is planned. Improperly sealed natural gas wells have the potential to act as natural gas conduits from deep reservoirs to shallow strata where flammable gases may pose hazards to excavation or tunneling activities. The locations of many abandoned or shut-in wells may be unknown due to inadequate or missing data or poor record-keeping.

24.1.2.4 Hazards from Historical Mercury Mining

Mercury has been identified as a chemical of concern in Delta area sediments, resulting from gold and mercury mining operations in the watersheds upstream of the Delta. Mercury was used extensively upstream of the study area in mining to extract gold from ores and placer gravel deposits. Mercury released into the environment by historic gold mining practices has been flowing into the study area via water, primarily from the Sacramento River watershed, and sediments since the mid-1800s and is expected to continue to enter the study area. An unknown amount of mercury is present in sediments within the study area, but estimates of mercury flowing into the study area, mainly associated with suspended sediment (Alpers et al. 2008:10), range from approximately 200–400 kg/yr (Central Valley Regional Water Quality Control Board 2008:116). A discussion of mercury and other metals and their bioaccumulative properties is provided in Chapter 8, *Water Quality*, and Chapter 25, *Public Health*.

24.1.2.5 Urban, Residential, and Recreational Land Use

In general, hazardous materials releases from cities and towns are associated with stormwater runoff and primarily affect water bodies. Cities and towns account for approximately 9% of the total study area. Urban stormwater discharges are generally characterized by varying levels of metals and hydrocarbons that can accumulate in river sediments over time. Historically, polychlorinated biphenyls (PCBs) have been associated with urban discharge, and these contaminants have been detected in fish tissues in San Francisco Bay.

Urban areas have many facilities with the potential for hazardous materials releases, including gas stations, dry cleaners, automotive repair facilities, and, in larger towns, manufacturing facilities. Stockton, for example, has large shipping and port facilities, as well as federal facilities with a history of hazardous materials use, storage, and releases. Antioch and Oakley, located on the south side of the San Joaquin River in the southern end of the study area, have major power-producing facilities and several active or former industrial facilities with known groundwater impacts. Possible contaminants of concern from urban land uses are extensive, but the most common contaminants in soil and groundwater are petroleum and associated compounds (typically gasoline and diesel releases from USTs as the source), chlorinated solvents and degreasers (from dry cleaning and vehicle repair facilities), and various heavy metals, such as arsenic and lead. The variety of contaminants that can exist in groundwater beneath urban land uses depends on the sources and on the geologic conditions present that might accelerate or limit dispersion of contaminants in soil and groundwater media. Wastewater discharges from treatment plants also are associated with urban and suburban land use. A detailed discussion of water quality is provided in Chapter 8, *Water Quality*. Given the small percentage of urban land in the study area, urban-related toxicants are of less concern than other potential sources of hazardous materials.

In addition, large marinas, service houseboats, pleasure craft, and commercial craft are present throughout the study area. Marinas typically include bulk fuel storage and overwater fueling, various boat repair/maintenance facilities, stores, boat storage, and camping facilities. Typical chemicals associated with marinas include fuels, lubricants, cleaners, anti-fouling paints, and fiberglass components.

24.1.2.6 Hazardous Materials Transportation

The study area and surrounding region are home to important urban centers, including the cities of Antioch, Stockton, Sacramento, and San Francisco. Major east-west surface transport routes and ship channels cross the Delta. These transportation corridors move a variety of products, including hazardous materials. Transportation of hazardous materials involves some risk of spillage and subsequent contamination of soil, water, or sediments.

Hazardous materials transported through the study area include a variety of commodities. However, detailed information is not available due to security and proprietary reasons. Attempts to obtain detailed information were met with non-disclosure responses, presumably due to proprietary and security concerns. In the wake of the terrorist attacks of September 11, 2001, the Department of Transportation's (DOT) Research and Special Programs Administration (RSPA), which has regulatory authority over all modes of hazardous materials transportation, published the HM-232 final rule on March 25, 2003. Codified at 49 CFR 172, HM-232 requires entities that transport certain types and quantities of hazardous materials to develop and implement security plans (Batelle and TotalSecurity.US n.d.). "En route" security is one of three required sections of security plans, specified in Section 172.802. Security plans are considered "security sensitive information," available only on a "need to know" basis to those with relevant responsibilities or appropriate security clearance (Batelle and TotalSecurity.US n.d.: 31; 49 CFR 172, Section 172.802[c]). While non-disclosure of information concerning materials and routes is not a specific requirement of HM-232, it is a common feature of security plans (Coleman pers. comm.).

Information provided in this section on the types of hazardous materials transported is therefore limited to publicly available information.

Assuming hazardous materials transportation corresponds reasonably with overall freight flows, hazardous materials move by water, pipeline, rail, and road through the Delta. The hazardous materials shippers and transporters must comply with specific requirements of 49 CFR 171 including proper classification, labeling, packaging, and handling. Figure 24-2 displays the locations of designated and restricted hazardous materials transportation routes, including rail, within the study area.

Transported Commodities of Concern

The following commodities are known to be transported through the study area by one or more modes of transportation. Acute, short-term health effects of exposure to these chemicals (commodities) are briefly described below. The effects of exposure to any hazardous substance depend on many variables, including the dose, duration and route of exposure.

- Anhydrous ammonia is commercially used directly or indirectly in production of pharmaceuticals. Anhydrous ammonia is also used in the production of fertilizer. It is a caustic or corrosive, colorless gas. Ammonia is an irritant and corrosive to the skin, eyes, respiratory

tract and mucous membranes. Exposure to liquid or rapidly expanding gases may cause severe chemical burns and frostbite to the eyes, lungs and skin (Tanner Industries, Inc. 2011).

- Crude oil, or petroleum, is a naturally occurring, combustible liquid. It is the base product that is processed to produce other petroleum products.
- Diesel, or petro-diesel, is a product of crude oil used as fuel for vehicles, trucks, ships, and generators. It is a volatile and flammable liquid. Direct contact with diesel fuel causes severe skin irritation. Inhalation of diesel fuel can result in lung damage (Phillips Petroleum Company 2012).
- Gasoline is a product of crude oil used primarily as engine fuel. It is a volatile and flammable liquid. Typical gasoline contains about 150 different chemicals, including BTEX compounds. Many adverse health effects of gasoline are due to individual chemicals in gasoline, mainly BTEX, that are present in small amounts. Breathing small amounts of gasoline vapors can lead to nose and throat irritation, headaches, dizziness, nausea, vomiting, confusion and breathing difficulties. Symptoms from swallowing small amounts of gasoline include mouth, throat and stomach irritation, nausea, vomiting, dizziness and headaches. Some effects of skin contact with gasoline include rashes, redness and swelling. Being exposed to large amounts of gasoline can lead to coma or death (Agency for Toxic Substances and Registry 1996).
- Natural gas consists primarily of methane and is a colorless and nearly odorless gas. It is used in building heating/cooling, water heaters, and clothes dryers, and as an alternative automobile fuel. Natural gas is volatile and flammable. Acute dizziness may result immediately or shortly after exposure to methane with oxygen levels of less than 15% in air; no long-term health effects are known to be associated with exposure to methane (State of Wisconsin 2010).
- Propane is normally a colorless gas, but it can be compressed into a transportable liquid. It is used as a fuel for barbecues, portable stoves, and residential central heating. It is known as liquefied petroleum gas (LPG or LP gas) when it is used as a vehicle fuel. Propane is volatile and flammable. Potential health effects associated with short-term exposure to propane include: dizziness, disorientation, excitation (hallucinations, euphoria); nausea and vomiting; unconsciousness; cardiac arrest; and frostbite (contact with liquid) (U.S. Department of Labor Occupational Health and Safety Administration 2003).
- Ethanol, also known as ethyl alcohol, pure alcohol, and grain alcohol, is used as a solvent of substances intended for human consumption, including flavorings, colorings, and medicines. It is also used as a fuel for heat and light, and as a fuel additive for internal combustion engines. It is a volatile, flammable, colorless liquid. Pure ethyl alcohol (200 proof) is a skin, eye, and lung irritant (Sciencelab.com, Inc. 2013).
- Coal fly ash is a residue generated in the combustion of coal. The main components of coal fly ash are oxides of silicon, aluminum, iron, and calcium, with lesser amounts magnesium, sulfur, sodium, and potassium. Other metals and metal-like elements are found in trace quantities – arsenic, cadmium, beryllium, thallium, nickel, lead, manganese, chromium, selenium, zinc, cobalt, mercury, and other metals. Some fly ash is recycled and used in Portland cement and asphalt cement, and is used as an engineering material for soil stabilization and embankment construction. *In vitro* studies have shown a link between coal fly ash exposure and DNA damage (Borm 1997), and occupational studies have indicated that prolonged exposure to coal ash results in decreased lung function (Schilling et al. 1988).

- Radioactive material occurs in many forms. Radioactive material is commonly used in industrial processes, to measure moisture, thickness, or other process parameters, and for such applications as inspecting welds, and in medicine in diagnostic and therapeutic procedures. The type and severity of adverse health effects from radiation are dependent on the amount and duration of radiation exposure. Adverse health effects from radiation exposure generally range from acute exposure effects including skin burns, nausea, weakness, hair loss, or diminished organ function, to DNA mutations and cancer (U.S. Environmental Protection Agency 2011b).
- Common acids and bases used in industry and research include sodium hydroxide; ammonium hydroxide; potassium hydroxide; hydrochloric acid; sulfuric acid; nitric acid; perchloric acid; and phosphoric acid. Strong acids and bases such as these are corrosive to skin, as well as nasal and lung tissue (if inhaled).

Pipelines

Pipelines are generally present throughout the study area and several pipelines are aligned west to east across the study area's southern half. Figure 24-3 displays the locations of study area oil and gas pipelines.

The main commodities transported through the pipelines are crude oil, refined petroleum products, and natural gas. A small portion of the pipelines carry more than one commodity. Pipeline depths could not be determined from publicly available mapping information.

Most of the study area pipelines are owned and operated by Pacific Gas and Electric Company. Other owners include Chevron Texaco, Standard Pacific Gas Line Inc., Sacramento Municipal Utility District, Kinder Morgan, and Equilon Pipeline Company LLC.

Rail

Union Pacific Railroad (UPRR) and BNSF Railway (formerly Burlington Northern Santa Fe Railway) (BNSF Railway) are the major railroads in the Delta. Two smaller railroads operate locally: the Central California Traction Company (CCT) and the Sierra Northern Railway. Both are short-line railroads at the Ports of Stockton and West Sacramento, respectively. These railroads provide service to UPRR and BNSF at the respective ports of their operations (Central California Traction Company 2010; Sierra Northern Railway 2010). For locations of railroads in the Delta and immediate vicinity, please refer to Figure 24-2. Chapter 19, *Transportation*, provides additional information on rail transport in the study area.

On their national rail network, BNSF carries liquefied petroleum gas, ethanol, plastics and chemicals, and other unspecified hazardous materials (BNSF Railway 2010). On its California routes, UPRR transports various chemicals, manufactured goods, agricultural products, industrial products, and energy products (Union Pacific Railroad 2010).

The exact types, quantities, or volumes of commodities transported through the study area by UPRR and BNSF Railway are not publicly available, presumably a function of hazardous materials security plans required by DOT, described in Section 24.1.2.6. Such non-disclosure is also consistent with definitions and regulations pertaining to protection of sensitive security information at 49 CFR 1520, Sections 1520.5(a)(3) and (8)(i); and 1520.9, applicable to maritime, rail and aviation transportation. It is assumed that commodities carried on the short-line railroads would be transferred to the main railroad companies; however, for the same reasons this cannot be confirmed

because of the safety and proprietary issues restricting access to commodity information from the ports, and state and federal agencies.

The short-line Sierra Northern Railway handles approximately 7,000 cars annually. Publicly-available information indicates commodities carried by Sierra Northern Railway includes unspecified chemicals, ethanol, and propane (Sierra Northern Railway 2010). Another short line railroad, the CCT, carries commodities such as plastics, unspecified chemicals, anhydrous ammonia, fly ash, fertilizer, ethanol, and calcium chloride. (Central California Traction Company 2010).

Federal, State, and County Roadways

Designated hazardous materials transportation routes avoid population centers, environmentally sensitive areas, narrow bridges, and tunnels. These routes are generally wider to provide easier access for first responders en route to an event (e.g., accident, release, or spill). Figure 24-2 shows the California designated routes for hazardous materials.

Designated hazardous materials routes in the study area are listed below.

- I-5, generally along the east side of the Delta boundary, and extending from Sacramento to south of Tracy.
- I-80, along the northern Delta boundary, and extending to Sacramento.
- I-680, generally along the western boundary of the Suisun Marsh boundary.
- I-205, aligned from west to east across the southern portion of the study area.
- State Route (SR) 113, on the west Delta boundary, where it intersects with SR 12.
- SR 12, aligned from west to east across the northeastern most boundary of Suisun Marsh, and then across the central study area from Rio Vista to Lodi.
- SR 4, generally aligned from west to east across the southern portion of the study area from Pittsburg to Stockton.
- SR 33, at the southernmost portion of the study area, is a south-north trending highway.
- Byron Highway, a county road along the southwestern boundary of the study area; it intersects with SR 4 and trends southeasterly to the intersection with I-205.
- West Grant Line Road, a county road along the southern boundary of the study area and just south of I-205. It is a west–east trending highway.
- Mountain House Parkway, a county road at the southern Delta boundary. It is a south–north route that extends from the intersection with I-580 to the intersection with Byron Highway.
- South Chrisman Road, a county road in the southernmost portion of the study area and extending from the intersection with I-580 to the intersection with West Grant Road.

Restricted hazardous materials routes are those that are not ideal as hazardous materials transportation corridors because of their proximity to population centers or environmentally sensitive areas, or because they contain narrow bridges, tunnels, or features that would limit access in the event of a hazardous materials release. The Federal Motor Carrier Safety Administration identifies non-radioactive hazardous materials restricted routes. These routes are identified on Figure 24-2.

A portion of I-80 (San Francisco-Oakland Bay Bridge) is identified as a hazardous materials restricted route for specified hazardous materials. There are a number of alternative highway routes within and around the study area in the event of a hazardous materials accident and/or release. Refer to Chapter 19, *Transportation*, for more detail about highways in the Delta.

Marine Transportation

Ships using ports in the study area transport hazardous materials by the Sacramento River, the San Joaquin River, the Sacramento River Deep Water Ship Channel (SRDWSC), and Stockton Deep Water Ship Channel (SDWSC). Ships enter the mainland at the Port of San Francisco, travel through San Pablo Bay, Suisun Bay, and Honker Bay before making their way to either the Sacramento River or the San Joaquin River, where they travel the SRDWSC or SDWSC to the port of choice. The Port of West Sacramento and the Port of Stockton lie within the study area.

The Port of West Sacramento is located on the Sacramento River and the SRDWSC. This port's location provides for immediate access to major highways and rail service. I-80 is approximately 0.25 miles from the front gate of the port. BNSF, UPRR, and Sierra Northern Railway provide rail service to the port. Intermodal services provided at the port are receiving from and loading out to ship, truck, or rail car. Typical cargoes at the Port of West Sacramento include cement, bulk and bagged fertilizer, pelletized Kaolin clay, and anhydrous ammonia (City of West Sacramento 2010).

The Port of Stockton is located on the SDWSC, approximately one mile from I-5 and other interconnecting major highway systems. It is centrally located, providing service for shipment and warehouse storage facilities for containerized and liquid bulk and dry bulk cargo. BNSF and UPRR serve these facilities. Commodities that are brought through the Port of Stockton include bulk materials, such as aggregate, coal, petroleum coke, ores, clay, sulfur, and anhydrous ammonia (Port of Stockton 2010).

24.1.2.7 Wildfire Hazards

In general, wildfire is a serious hazard in undeveloped areas with extensive areas of non-irrigated vegetation. Fire hazard classification varies by areas in and around the study area. For example, a portion of Yolo County west of Esparto and Winters is classified as having moderate to very high wildfire risk; the very high risk areas are concentrated in the northwest portion of the county bordering Lake, Colusa, and Napa counties and are outside of the study area. Most of the remaining undeveloped lands in Yolo County are unzoned and represent minimal to moderate fire risk. In Solano County, the foothills and mountainous watershed areas are classified as very high fire hazard severity zones. The Cordelia Hills, Potrero Hills, Cement Hills, and western English Hills are all designated as high-risk fire areas (Solano County 2008). As another example, fire hazards are considerable throughout Contra Costa County because of highly vegetated areas containing wildlife habitats. The threat of brush fires is greatest during late summer. These fires burn hot and rapidly, and, combined with winds, can become destructive crown fires (fires that advance through canopy fuels more or less independently of surface fires). In Alameda County, the potential for destructive wildland fires is relatively high throughout the county's undeveloped hill areas because of the rolling to rugged terrain, continuous flammable vegetation cover, and long and dry summers with high wind conditions.

24.1.3 Airports within 2 miles of the Water Conveyance Option Footprints or Restoration Opportunity Areas

There were three public and eight private airports within the Plan Area identified as being within 2 miles of one or more of the five water conveyance alignment footprints. These airports are described briefly below.

24.1.3.1 Public Airports

Byron Airport. This airport is located 2 miles south of Bryon, and is owned by the county of Contra Costa. Byron Airport has two runways, and averages 164 operating aircraft per day, based on a 12-month period ending December 31, 2012 (AirNav, LLC 2013a). There is no control tower. Fuel is sold on site.

Lost Isle Seaplane Base. This airport is located approximately 8 miles northwest of Stockton, and is owned by the California State Lands Commission. The Lost Isle Seaplane Base has one runway, and averages approximately 12 operating aircraft per year, based on a 12-month period ending February 5, 2012 (AirNav, LLC 2013b). There is no control tower.

Franklin Field Airport. This airport is located approximately 4 miles southeast of Franklin, and is owned by the county of Sacramento. The Franklin Field Airport has two runways, and averages approximately 89 operating aircraft per day, based on a 12-month period ending January 31, 2013 (AirNav, LLC 2013c). There is no control tower.

24.1.3.2 Private Airports

Delta Air Park. This airport is located approximately 3 miles northeast of Brentwood, in Oakley.

Garibaldi Brothers. This airport is located in Benicia, and has one grass runway. There is no control tower.

Maine Prairie Airport. This airport is located 3 miles south of Dixon, and has one, gravel-surfaced runway. There is no control tower, and permission is required to land. Maine Prairie Airport supports primarily agricultural aircraft operations (AirNav, LLC 2013d).

Borges-Clarksburg Airport. This airport is located approximately 2 miles northeast of Clarksburg, and has one turf runway. There is no control tower, and permission is required to land. The Borges-Clarksburg Airport averages approximately 57 operating aircraft per week, based on a 12-month period ending December 31, 2001 (AirNav, LLC 2013e).

Spezia Airport. This airport is located approximately 3 miles southwest of Walnut Grove and has one dirt runway. There is no control tower, and permission is required to land (AirNav, LLC 2013f).

Walnut Grove Airport. This airport is located in Isleton, and has one runway.

Flying B Ranch Airport. This airport is located approximately 3 miles southeast of Franklin, and has one turf runway. There is no control tower, and permission is required to land (AirNav, LLC 2013g).

Funny Farm Airport. This airport is located approximately 3 miles northeast of Brentwood, and has a single asphalt runway. There is no control tower, and permission is required to land (AirNav, LLC 2013h).

24.2 Regulatory Setting

This section describes federal and state statutes that provide the regulatory basis for conducting assessments of the potential hazardous materials, hazardous waste, or hazardous constituents that may be present at and potentially released into the Delta. This section also discusses local general plan policies and actions related to hazards and hazardous materials.

24.2.1 Federal Plans, Policies, and Regulations

The U.S. Environmental Protection Agency (EPA) is the lead federal agency responsible for the enforcement of federal regulations associated with hazardous materials. The primary legislation governing hazardous materials are the Comprehensive Environmental Response, Compensation, and Liability Act; the Resource Conservation and Recovery Act; and the Superfund Amendments and Reauthorization Act.

24.2.1.1 Comprehensive Environmental Response, Compensation and Liability Act, as Amended

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (42 United States Code [USC] Section 9601 et seq. 1980) provides federal funds to clean up uncontrolled or abandoned hazardous waste sites, accidents, spills, discharges, and other emergency releases of pollutants and contaminants into the environment. Through CERCLA, EPA was given authority to seek out those parties responsible for any hazardous release and assure their cooperation in the cleanup.

24.2.1.2 Resource Conservation and Recovery Act, as Amended

The Resource Conservation and Recovery Act (RCRA) (42 USC Section 6901 et seq. 1976) provides EPA with the authority to control hazardous waste from cradle-to-grave. This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. The 1984 federal Hazardous and Solid Waste Amendments to RCRA focus on waste minimization and phasing out land disposal of hazardous waste, as well as corrective actions for releases. Other mandates of this law include increased enforcement authority for EPA, more stringent hazardous waste management standards, and a comprehensive UST program. The 1986 RCRA amendments enabled EPA to address environmental problems from underground tanks storing petroleum and other hazardous substances. RCRA also sets forth a framework for the management of non-hazardous solid wastes. RCRA Section 3006 allows EPA with to authorize state hazardous waste programs. Once authorized, the state program operates in lieu of the federal program, although EPA retains enforcement authority even after a state program has been authorized.

24.2.1.3 Superfund Amendments and Reauthorization Act

The Superfund Amendments and Reauthorization Act (SARA) of 1986 reauthorized CERCLA to continue cleanup activities around the country. Several site-specific amendments, definition clarifications, and technical requirements were added to the statute, including additional enforcement authorities. Title III of SARA authorized the Emergency Planning and Community Right-to-Know Act (EPCRA). The objective of the EPCRA is to: (1) allow state and local planning for chemical emergencies, (2) provide for notification of emergency releases of chemicals, and (3) address communities' right-to-know about toxic and hazardous chemicals. The four major

provisions of the EPCRA regulations (40 Code of Federal Regulations [CFR] Parts 350-372) are listed below.

- Emergency Planning (Sections 301 – 303)
- Emergency Release Notification (Section 304)
- Hazardous Chemical Storage Reporting (Sections 311 – 312)
- Toxic Chemical Release Inventory (Section 313)

24.2.1.4 Toxic Substances Control Act

The Toxic Substances Control Act of 1976 (TSCA) (15 USC 2601 et seq. 1976) gives the EPA authority to establish reporting, recordkeeping and testing requirements, and restrictions relating to chemical substances and/or mixtures. TSCA addresses the production, import, use, and disposal of specific chemicals, including PCB, asbestos, radon, and lead-based paint.

24.2.1.5 National Emissions Standards for Hazardous Air Pollutants

The Federal Clean Air Act (Clean Air Act) (42 USC 7401 et seq. 1970) requires the EPA to develop and enforce regulations to protect the general public from exposure to airborne contaminants that are known to be hazardous to human health. In accordance with Section 112 of the Clean Air Act, EPA established National Emissions Standards for Hazardous Air Pollutants (NESHAP) to protect the public. Asbestos was one of the first hazardous air pollutants regulated under Section 11240 CFR, Subpart M, Section 61.145. Asbestos is a naturally occurring fibrous material that was historically used in many building materials for fire-proofing and insulation. In general, buildings constructed prior to 1980 have the potential for asbestos-containing materials. The EPA has classified asbestos as a Group A, known human carcinogen.

The California Air Resources Board, under The Asbestos Program, enforces compliance with NESHAP and investigates all related complaints, as specified by the California Health and Safety Code Section 39658(b)(1). Of the 35 air districts in California, 19 do not have an asbestos program in place. In these "non-delegated" districts, a demolition/renovation notification is required for compliance with the Asbestos NESHAP.

24.2.1.6 Federal Insecticide, Fungicide and Rodenticide Act

The federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) (7 USC 136 et seq. 1996) provides for federal regulation of pesticide distribution, sale, and use. All pesticides distributed or sold in the United States must be registered (licensed) by EPA. Before EPA registers a pesticide under FIFRA, the applicant must show that, among other things, use of the pesticide according to specifications "will not generally cause unreasonable adverse effects on the environment." FIFRA imposes pesticide-labeling requirements; controls when and under what conditions pesticides can be applied, mixed, stored, loaded or used; specifies when fields can be reentered after pesticide application; and identifies when crops can be harvested. Under FIFRA, registrations and product labeling may restrict uses of pesticides. As a part of the pesticide registration, EPA classifies the product or some uses of the product as "restricted use" if it may cause unreasonable adverse effects even when used as directed on the product labeling. Only certified pesticide applicators may use restricted-use pesticides.

24.2.1.7 Hazardous Materials Transportation Act

The Hazardous Materials Transportation Act (HMTA) (49 USC 5101–5127) was enacted in 1975. HMTA's primary objective is to provide adequate protection against risks to life and property inherent in commercial transportation of hazardous materials by improving the regulatory and enforcement authority of the Secretary of Transportation. Hazardous materials, as defined by the Secretary of Transportation are any "particular quantity or form" of a material that "may pose an unreasonable risk to health and safety or property." Among the material designated as hazardous are explosives; radioactive materials; infectious substances; flammable or combustible liquids, solids, or gases; toxic, oxidizing, or corrosive materials; and compressed gases in specified forms and quantities. The regulations cited in the HMTA apply, but are not limited to, a person who transports hazardous materials, designs containers for, or prepares or accepts hazardous materials for transportation. HMTA governs safety aspects, including security, of the transportation of hazardous materials that the Secretary of the DOT considers appropriate.

Enforcement of the HMTA is shared by each of the following administrations under delegations from the Secretary of the DOT:

- RSPA Responsible for container manufacturers, reconditioners, and retesters and shares authority over shippers of hazardous materials.
- Federal Highway Administration (FHWA) enforces all regulations pertaining to motor carriers.
- Federal Railroad Administration (FRA) enforces all regulations pertaining to rail carriers.
- Federal Aviation Administration (FAA) enforces all regulations pertaining to air carriers.
- Coast Guard enforces all regulations pertaining to shipments by water.

24.2.1.8 The Clean Water Act

The Clean Water Act (33 USC 1251 et seq.) (described in greater detail in Chapter 8, *Water Quality*), establishes the institutional structure for EPA to regulate discharges of pollutants into the waters of the United States, establish water quality standards, conduct planning studies, and provide funding for specific grant projects.

The EPA has provided most states with the authority to administer many of the provisions of the Clean Water Act. In California, the State Water Resources Control Board (State Water Board) has been designated by EPA to develop and enforce water quality objectives and implementation plans. The State Water Board has delegated specific responsibilities for the development and enforcement actions to the Central Valley Regional Water Quality Control Board (Central Valley Water Board).

Section 402 of the CWA (33 USC 1342) establishes the National Pollutant Discharge Elimination System (NPDES) permit program to regulate point source discharges of pollutants into waters of the United States (discussed in greater detail in Chapter 8, *Water Quality*). A NPDES permit sets specific discharge limits for point sources discharging pollutants into waters of the United States and establishes monitoring and reporting requirements, as well as special conditions. Typically, NPDES permits are issued for a five-year period by the Regional Water Quality Control Boards (RWQCBs).

24.2.1.9 Safe Drinking Water Act

The Safe Drinking Water Act (SDWA) (42 USC 300f et seq. 6939b; 15 USC 1261 et seq.) was originally passed by Congress in 1974 to protect public health by regulating the nation's public

drinking water supply. SDWA authorizes EPA to set national health-based Maximum Contaminant Levels (MCLs) for drinking water to protect against both naturally occurring and human-made contaminants that may be found in drinking water. EPA, state regulatory agencies, and water systems managers then work together to ensure these standards are met. The law was amended in 1986 and 1996 and requires many actions to protect drinking water and its sources, including rivers, lakes, reservoirs, springs, and groundwater wells. EPA protects underground sources of drinking water, and many environmental regulations use the MCLs for environmental clean-up standards.

24.2.1.10 Oil Pollution Act of 1990

The Oil Pollution Act of 1990 (33 USC 2701–2762) is an amendment to the Clean Water Act. It requires certain on- and off-shore facilities, which store and use oil and fuels and which could reasonably be expected to cause substantial harm to the environment, to prepare plans to respond to a worst-case discharge of oil and threats of such a discharge to navigable waters or adjoining shorelines. Under the Oil Pollution Act, the Spill Prevention, Control, and Countermeasure (SPCC) Rule (40 CFR 112) regulates non-transportation-related onshore and offshore facilities that could reasonably be expected to discharge oil into navigable waters of the United States or adjoining shorelines. The act requires the preparation and implementation of site-specific SPCC plans to prevent and respond to oil discharges that could affect navigable waters.

24.2.1.11 Federal Railroad Administration

The Federal Railroad Administration (FRA) is responsible for promulgating and enforcing rail safety regulations. These regulations are codified at Title 49 CFR Part 200–299. The FRA administers a safety program that oversees the movement of hazardous materials (including dangerous goods), such as petroleum, chemical, and nuclear products, throughout the United States' rail transportation system, including shipments transported to and from international organizations.

24.2.1.12 Occupational Safety and Health Act

The Occupational Safety and Health Administration (OSHA) administers the Occupational Safety and Health Act, (29 USC 15) which requires special training of handlers of hazardous materials, notification to employees who work in the vicinity of hazardous materials, and acquisition from the manufacturer of material safety data sheets (MSDS). An MSDS describes the proper use of hazardous materials and is intended to provide workers and emergency personnel with procedures for handling or working with that material. The Act also requires the training of employees to remediate any hazardous materials accidental releases.

24.2.1.13 Safe, Efficient Use and Preservation of Navigable Airspace

In administering Title 14 of CFR Part 77, the prime objectives of the FAA are to promote air safety and the efficient use of navigable airspace. Proponents of projects near an airport must provide the FAA with a Notice of Proposed Construction or Alteration for review prior to initiating construction. Title 14 CFR 77.9 states that any person/organization who intends to sponsor any of the construction or alterations listed below must notify the Administrator of the FAA.

- Any construction or alteration exceeding 200 feet above ground level at its site.

- Any construction or alteration that exceeds an imaginary surface extending outward and upward at any of the following slopes:
    - 100 to 1 for a horizontal distance of 20,000 feet from the nearest point of the nearest runway of each airport described in paragraph (d) of Section 77.9 with its longest runway more than 3,200 feet in actual length, excluding heliports.
    - 50 to 1 for a horizontal distance of 10,000 feet from the nearest point of the nearest runway of each airport described in paragraph (d) of Section 77.9 with its longest runway no more than 3,200 feet in actual length, excluding heliports. within 5,000 feet of a public use heliport which exceeds a 25:1 surface.
    - 25 to 1 for a horizontal distance of 5,000 ft. from the nearest point of the nearest landing and takeoff area of each heliport described in paragraph (d) of Section 77.9.
- Any highway, railroad, or other traverse way for mobile objects, of a height which, if adjusted upward 17 feet for an Interstate Highway that is part of the National System of Military and Interstate Highways where overcrossings are designed for a minimum of 17 feet vertical distance, 15 feet for any other public roadway, 10 feet or the height of the highest mobile object that would normally traverse the road, whichever is greater, for a private road, 23 feet for a railroad, and for a waterway or any other traverse way not previously mentioned, an amount equal to the height of the highest mobile object that would normally traverse it, would exceed a standard of paragraph (a) or (b) of this section.
- Any construction or alteration on any of the following airports and heliports:
    - A public use airport listed in the Airport/Facility Directory, Alaska Supplement, or Pacific Chart Supplement of the U.S. Government Flight Information Publications.
    - A military airport under construction, or an airport under construction that will be available for public use.
- An airport operated by a federal agency or the Department of Defense.
- An airport or heliport with at least one FAA-approved instrument approach procedure.

There is no need to file a notice for construction or alteration in any of the instances listed here.

- Any object that will be shielded by existing structures of a permanent and substantial nature or by natural terrain or topographic features of equal or greater height, and will be located in the congested area of a city, town, or settlement where the shielded structure will not adversely affect safety in air navigation.
- Any air navigation facility, airport visual approach or landing aid, aircraft arresting device, or meteorological device meeting FAA-approved siting criteria or an appropriate military service siting criteria on military airports, the location and height of which are fixed by its functional purpose.
- Any construction or alteration for which notice is required by any other FAA regulation.
- Any antenna structure of 20 feet or less in height, except one that would increase the height of another antenna structure.

Aeronautical studies are conducted by the FAA based on information provided by project proponents to ensure construction equipment and facilities will not interfere with air traffic. In

addition, standards describing marking and lighting structures, such as buildings, chimneys, antenna towers, cooling towers, storage tanks, and supporting structures of overhead wires, are provided.

The California Department of Transportation (Caltrans), Division of Aeronautics performs safety functions with regard to the state's navigable airspace which are not FAA's responsibility:

- Permit and inspect over 300 public-use and special-use airports. In addition, under contract for the FAA, the Division conducts federal Airport Master Record inspections at non-commercial, public use airports in conjunction with the Division's periodic airport permit compliance and safety inspection program.
- Permit and inspect over 460 hospital and other special-use heliports. Conduct a periodic permit compliance and safety inspection program for hospital heliports.
- Authorize helicopter landings at or within 1000 feet of schools (K-12).
- Evaluate the acquisition of proposed public schools (K-12), community college, and State building sites within two miles of an airport runway.

24.2.2 State Plans, Policies, and Regulations

24.2.2.1 California Hazardous Substance Account Act

The California equivalent to CERCLA, the Carpenter-Presley-Tanner Hazardous Substance Account Act (California Health and Safety Code, Chapter 6.8), was adopted in 1999. This act requires past and present owners and operators to assume liability for the remediation of hazardous waste sites within California. The regulations also contain the provisions listed below.

- Response authority for releases of hazardous substances, including spills and hazardous waste disposal sites.
- Compensation for medical expenses and lost wages or business income resulting from injuries caused by exposure to releases of hazardous substances.
- Funds for the state to assure payment of its 10% share of the costs mandated pursuant to Section 104(c)(3) of the federal act (42 USC Section 9604(c)(3)).

Similar to the 1996 CERCLA amendments that encourage cleanup of contaminated sites, the California Land Reuse and Revitalization Act of 2004 was codified in the Health and Safety Code, Division 20, Chapter 6.82, Sections 25395.60–25395.105. This chapter encourages the development or redevelopment of urban properties, provides processes that ensure remediation to protect public health, safety, and the environment, and relieves innocent owners, bona fide prospective purchasers, and owners of property adjacent to contaminated sites of liabilities and responsibilities that should be borne by those who caused or contributed to the contamination.

The Health and Safety Code Section 25356.1 requires that the California Department of Toxic Substances Control (DTSC) prepare or approve remedial action plans for sites where hazardous substances were released to the environment if they are listed as Superfund sites. RWQCBs have the responsibility to make decisions regarding cleanup and abatement goals and objectives for the protection of water quality (Section 24.2.2.9, *Water Code*). RWQCBs also regulate the disposal of contaminated soil.

24.2.2.2 California Hazardous Waste Control Law

The California Hazardous Waste Control Law (California Health and Safety Code Chapter 6.5 of Division 20) is the basic hazardous waste statute in California and is administered by DTSC. This law is similar to, but generally more stringent than, RCRA, and applies to a broader range of hazardous wastes, and requires recycling and waste reduction programs. Under this law, DTSC is authorized to administer California's hazardous waste program and implement the federal program in California. Title 22, Division 4.5 contains DTSC's hazardous waste regulations.

24.2.2.3 Hazardous Waste Program

Generation, transportation, treatment, storage, and disposal of characteristic and listed hazardous wastes are regulated under the Health and Safety Code, Sections 25100 to 25250.28. As part of hazardous waste regulation, Health and Safety Code Sections 25250 through 25250.28 regulate PCBs in used oil and prohibit used oil recycling or reuse if the oil contains 5 parts per million or greater of PCBs.

24.2.2.4 Hazardous Materials Release Response Plans and Inventory

Similar to SARA, the Hazardous Materials Release Response Plans and Inventory was codified in the Health and Safety Code Division 20, Chapter 6.95, Sections 25500–25520. This code requires certain businesses to prepare plans relating to the handling and release or threatened release of hazardous materials. This act establishes minimum statewide standards for contents of plans, including location, type, quantity, and health risks of hazardous materials handled, used, stored, or disposed of, which could be accidentally released into the environment. It ensures that firefighters, health officials, planners, public safety officers, health care providers, regulatory agencies, and other interested persons have access to the plans.

24.2.2.5 California Underground Storage Tank Program

The California Underground Storage Tank Program is designed to: (1) prevent contamination from the improper storage of hazardous substances stored underground, (2) ensure that existing tanks are properly maintained, inspected, tested, and upgraded, and (3) ensure that new USTs meet appropriate standards. The California regulations are codified in the Health and Safety Code, Division 20, Chapter 6.7, Sections 25280–25299.8.

24.2.2.6 Aboveground Petroleum Storage Act (APSA) of 2007

California adopted a statewide program to determine the amount and type of hazardous substances being stored in aboveground tanks under the Health and Safety Code Division 20, Chapter 6.67, Sections 25270–25270.13. APSA applies to storage tank facilities with aggregate petroleum storage capacities greater than 1,320 gallons and requires development and implementation of a SPCC Plan consistent with 40 CFR 112. Facilities must submit annual Tank Facility Statements and, depending on Certified Unified Program Agency (CUPA) requirements, may be required to submit to periodic inspection.

24.2.2.7 California Solid Waste

Solid waste in California is regulated under Title 14, Division 7 and Title 27, Division 2 of the California Code of Regulations (CCR). These regulations establish minimum standards for the

handling and disposal of solid wastes. Both the State Water Board and the California Integrated Waste Management Board have oversight and approval authority over local enforcement agencies that permit and take enforcement action on solid waste management facilities. Public Resources Code Sections 43200–43219, 43020, 43020.1, 43021, 43030, 43101, and 43103 govern the local enforcement agencies.

Prior to disposal at a landfill facility, contaminated solids must be properly characterized in accordance with EPA publication SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods. Based on the analytical results, material will likely be classified as one of the following:

- Nonhazardous waste
- Non-RCRA hazardous waste (state regulated)
- RCRA hazardous waste (federally regulated)

Each waste classification has unique requirements for assessment, handling, and disposal. Many options exist for the disposal of contaminated soils including treatment, recycling, and disposal at a permitted facility or landfill. Landfills in California accepting contaminated solids are classified as:

- Class I – Accepts wastes classified as RCRA hazardous by the CCR
- Class II – Accepts hazardous waste (RCRA or non-RCRA) designated as having a lower risk, or nonhazardous waste that significantly threatens water quality
- Class III – Accepts nonhazardous waste and inert material

24.2.2.8 Control of Pesticides

The California Legislature enacted Food and Agricultural Code sections similar to the EPA FIFRA program to promote and protect the agricultural industry, and to protect public health, safety, and welfare. Divisions 6 and 7, Sections 11401–14155 of the Food and Agricultural Code, regulate pest control operations, application of pesticides, and applicators, and restrict the use of some pesticides and are implemented by the CalEPA, Department of Pesticide Regulation.

24.2.2.9 Water Code

The state Water Code Division 7, Chapter 5 requires the State Water Board and DTSC to establish policies and procedures for investigation of, and remediation and abating the effects of, a hazardous substance discharge that creates, or threatens to create, a condition of contamination, pollution, or nuisance. The policies and procedures must be consistent with the policies and procedures established pursuant to the Health and Safety Code, Section 25355.7. The policies and procedures are established in State Water Board Resolution No 92-49.

The Porter-Cologne Water Quality Control Act (codified at Division 7 of the California Water Code) allows the State Water Resources Control Board to impose water pollution control requirements on discharges (see Chapter 6 of this document, *Surface Water*, for more information on the Porter-Cologne Act).

24.2.2.10 State Water Board Resolution No. 92-49

The State Water Board adopted Resolution Number 92-49, Policies and Procedures for Investigation and Cleanup and Abatement of Discharges, under Water Code Section 13304. This resolution establishes policies and detailed procedures for all investigations and remediation of any discharge (release) that causes, or threatens to cause, conditions of soil, water pollution, or nuisance associated with the migration of waste or fluid from waste management units. The resolution also requires coordination among other agencies, including DTSC, the EPA, and local governances.

24.2.2.11 California Law for Conservation of Petroleum

The California Law for Conservation of Petroleum (Division 3, Oil and Gas, Chapter 1, Oil and Gas Conservation) regulates operators of oil wells and oil production facilities. Sections within Chapter 1 govern notices of intent to drill wells, proper abandonment of oil wells to ensure protection of surface and groundwater, and abandonment of old wells that pose a present danger to life, health, or naturals resources (land, air, and water). Sections also establish emergency reporting requirements for oil discharges to land.

24.2.2.12 California Department of Conservation, Division of Oil, Gas, and Geothermal Resources Construction-Site Plan Review Program

The Division of Oil, Gas, and Geothermal Resources (DOGGR) regulates drilling, operation, maintenance, and abandonment of oil, gas, and geothermal wells. Plugging and abandonment of oil and gas wells is to be done according to Title 14 CCR, Division 2, Chapter 4, Subchapter 1, Article 3, Sections 1723–1723.8. As part of DOGGR's responsibilities for implementing Section 3208.1 of the Public Resources Code (PRC), districts have developed the Construction-Site Plan Review Program to assist local agencies in identifying and reviewing the status of oil or gas wells near proposed development. The program is aimed at addressing potentially dangerous issues associated with development near oil or gas wells. DOGGR serves in an advisory role to make relevant information available to local agencies. Section 3208.1 of the PRC states that if any property owner, developer, or local permitting agency either fails to obtain an opinion from DOGGR or fails to follow the advice of DOGGR when development occurs near an oil or gas well, then the owner of the property on which the well is located may be responsible for re-abandonment costs should a future problem arise with the well. To use the DOGGR Well Review Program, the developer or property owner submits a completed Well Review Program Application to DOGGR. Before issuing building or grading permits, local permitting agencies review and implement DOGGR's preconstruction well requirements. Interaction between local permitting agencies and DOGGR helps resolve land-use issues and allows for responsible development in oil and gas fields.

24.2.2.13 California Occupational Safety and Health Act

The California Occupational Safety and Health Administration (Cal-OSHA) regulates worker safety similar to federal OSHA but also requires preparation of an Injury and Illness Prevention Program, an employee safety program of inspections, procedures to correct unsafe conditions, employee training, and occupational safety communication. In addition, Cal-OSHA regulations indirectly protect the general public by requiring construction managers to post warnings signs, limit public access to construction areas, and obtain permits for work considered to present significant risk of injury or to worker health, such as work in tunnels under potentially hazardous conditions and asbestos and lead abatement.

Tunnel Safety Orders of the California Code of Regulations

CCR Title 8, Division 1, Chapter 4, Subchapter 20, Sections 8400 through 8469 "Tunnel Safety Orders," sets forth safety standards and provisions, intended to protect workers during tunneling operations. Section 8425, "Operation of Gassy and Extrahazardous Tunnels" identifies safety measures, as follows, to ensure safe work in tunnels classified as "gassy" or "extrahazardous" by Cal-OSHA's Mining and Tunneling Unit.

> (a)(1) Before any electrical equipment or services are installed or used in places classified as Gassy or Extrahazardous, they shall be permissible, approved, or in accordance with Title 8, Electrical Safety Orders and acceptable to the Division of Occupational Safety and Health (the Division).
>
> EXCEPTION: In tunnels where the classification is based on toxic gas(es) which does not present a fire or explosive hazard, the provisions which address a source of ignition shall not be applied.
>
> (2) Before any internal combustion engine is permitted to enter any place classified as Gassy or Extrahazardous, the internal combustion engine shall be of an approved, permissible safe design acceptable to the Division.
>
> (b) Smoking shall be prohibited and the employer shall be responsible for collecting all personal sources of ignition such as matches, lighters, cameras and radios from all persons entering the tunnel.
>
> (c) Welding, cutting, or other hot work and/or spark producing operations shall not be permitted while a probe hole is being drilled or when the tunnel face is being excavated, and shall only be done in atmospheres containing less than 10 percent of the lower explosive limit (LEL) and under the direct supervision of qualified persons. Tests for gas and vapors shall be made before the start and continuously during such operations.
>
> (d) Tests for flammable gas shall be conducted in the return air and measured not less than a distance of 12 inches from any surface in any open workings.
>
> (e) Tests for flammable petroleum vapors shall be conducted in the return air and measured at a distance not less than 3 inches from any surface in any open workings.
>
> (f) Whenever gas levels in excess of 10 percent of the LEL are encountered, the Division shall be notified immediately. Any work therein shall be conducted with extra care and steps shall be taken to increase ventilation.
>
> (g) A fixed system of continual automatic monitoring equipment shall be provided for the heading, muck handling, transfer points and return air of tunnels using mechanical excavators. The monitors shall have sensors so situated that they will detect any anticipated gas encountered and shall signal the heading, give visual and audible warning and shut down electric power in the tunnel, except for acceptable ventilation and pumping equipment necessary to evacuate personnel, when 20 percent or more of LEL is encountered. In addition, a manual shut down control shall be provided near the heading.
>
> (h) In tunnels driven by conventional drill and blast methods, the air shall be tested for gas prior to re-entry after blasting and continuously when employees are working underground.
>
> (i) The main ventilation systems shall exhaust flammable gas or vapors from the tunnel, shall be provided with explosion relief mechanisms, and shall be constructed of fire-resistant materials.
>
> (1) In any tunnel classified Extrahazardous, the main ventilation system shall contain a cutoff switch capable of stopping all electrical machinery underground automatically should the fan fail or its performance fall below minimum power needed to maintain a safe atmosphere.
>
> (j) A refuge chamber or alternate escape route shall be maintained within 5,000 feet of the face of a tunnel classified as gassy or extra-hazardous. Workers shall be provided with emergency rescue equipment and trained in its use. Refuge chambers shall be equipped with a compressed air supply, a

telephone, and means of isolating the chamber from the tunnel atmosphere. The emergency equipment, air supply, and rescue chamber installation shall be acceptable to the Division.

(k) At a tunnel classified as Gassy or Extrahazardous, the Division shall permit the tunnel to operate up to but not exceeding 20 percent of the LEL without further notification if the required precautionary measures are in effect and permission is given in writing.

Asbestos Standard for Construction

Cal-OSHA regulations prohibit asbestos emissions from demolition and construction activities; require medical examinations and monitoring of employees engaged in activities that could disturb asbestos; specify precautions and safe work practices to minimize the potential for release of asbestos; and require notice to federal and local government agencies before beginning demolition or construction activities that could disturb asbestos.

CCR Title 8, Subchapter 4, Article 4, Section 1529 regulates asbestos exposure in all construction work as defined in Section 1502 including but not limited to the following.

- Demolition or salvage of structures where asbestos is present.
- Removal or encapsulation of materials containing asbestos.
- Construction, alteration, repair, maintenance, or renovation of structures, substrates, or portions thereof, that contain asbestos.
- Installation of products containing asbestos.
- Asbestos spill/emergency cleanup.
- Transportation, disposal, storage, containment of and housekeeping activities involving asbestos or products containing asbestos, on the site or location at which construction activities are performed.
- Excavation which may involve exposure to asbestos as a natural constituent which is not related to asbestos mining and milling activities.
- Routine facility maintenance.
- Erection of new electric transmission and distribution lines and equipment, and alteration, conversion and improvement of the existing transmission and distribution lines and equipment.

24.2.2.14 Safe Drinking Water and Toxics Enforcement Act

The Safe Drinking Water and Toxics Enforcement Act (also known as Proposition 65) was established in the California Health and Safety Code in Division 20, Chapter 6, Sections 25249.5–25249.13 in 1986. The Act requires the state to publish a list of chemicals known to cause cancer, birth defects, or other reproductive harm. The list must be updated at least once a year and included approximately 800 chemicals in 2011. The Act requires California businesses to notify the public about significant quantities of chemicals released into the environment at levels exceeding identified risk levels. Under the Act, California businesses are prohibited from knowingly discharging substantial quantities of listed chemicals into drinking water sources. The Office of Environmental Health Hazard Assessment (OEHHA) administers the Proposition 65 program. OEHHA is part of the California Environmental Protection Agency (Cal EPA) and evaluates all currently available scientific information on substances considered for inclusion on the Proposition 65 list.

24.2.2.15 Accidental Release Prevention Law

In 1986, California adopted the La Follette Bill, which was the predecessor to the Accidental Release Prevention Law. The La Follette Bill regulated "acutely hazardous materials" and was intended to expand control over materials that can produce toxic clouds after fires, explosions or other accidents. In 1996, the state codified the programs created under the La Follette Bill into the Accidental Release Prevention Law in Sections 25531–25543.3 of the California Health and Safety Code. The Accidental Release Prevention Law provides consistency with federal laws (i.e., EPRCA and the Clean Air Act) that allow local oversight of both the state and federal programs. The state and federal laws are similar in their requirements; however, the California threshold planning quantities for regulated substances are lower than the federal values. Local agencies may set lower reporting thresholds or add chemicals to the program.

Beginning in 1997, the Accidental Release Prevention Law has been implemented by the state's local CUPAs. The California Accidental Release Prevention (CalARP) program was implemented on January 1, 1997 by CalEMA and replaced the California Risk Management and Prevention Program (RMPP). The purpose of the CalARP program is to prevent accidental releases of substances that can cause serious harm to the public and the environment, to minimize the damage if releases do occur, and to satisfy community right-to-know laws. This is accomplished by requiring businesses that handle more that a threshold quantity of a regulated substance listed in the regulations to develop a Risk Management Plan (RMP). An RMP is a detailed engineering analysis of the potential accident factors present at a business and the mitigation measures that can be implemented to reduce this accident potential.

The CalARP program is implemented at the local government level by CUPAs also known as Administering Agencies (AAs). The CalARP program is designed so these agencies work directly with the regulated businesses. The CUPAs determine the level of detail in the RMPs, review the RMPs, conduct facility inspections, and provide public access to most of the information. Confidential or trade secret information may be restricted.

24.2.2.16 Fire Hazard Severity Zones

In accordance with Public Resources Code sections 4201 to 4204 and Government Code sections 51175 to 51189, the California Department of Forestry and Fire Prevention (CAL FIRE) has mapped areas of significant fire hazards based on fuels, terrain, weather, and other relevant factors. The zones are referred to as Fire Hazard Severity Zones and represent the risks associated with wildland fires. Under CAL FIRE regulations, areas within very high fire hazard severity zones must comply with specific building and vegetation requirements intended to reduce property damage and loss of life.

24.2.3 Local Plans, Policies, and Regulations

24.2.3.1 Certified Unified Program Agencies

The Unified Program consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections, and enforcement activities of six environmental and emergency response programs. The Cal EPA and other state agencies set the standards for their programs, and local governments implement the standards. These local implementing agencies are called CUPAs. For each county, CUPAs regulate and oversee these documents and activities.

- Hazardous materials business plans.
- California accidental release prevention plans or federal risk management plans.
- The operation of ASTs and USTs.
- Universal waste and hazardous waste generators and handlers.
- Uniform Fire Code implementation.
- Onsite hazardous waste treatment.
- Inspections, permitting, and enforcement.
- Proposition 65 reporting.
- Emergency response.

24.2.3.2 County General Plans

This section identifies relevant policies and actions related to hazards and hazardous materials in local general plans of the counties within the study area: Alameda, Contra Costa, Sacramento, San Joaquin, Solano, and Yolo.

Alameda County

East County Area Plan

The *East County Area Plan* (Alameda County 2000) was adopted as part of the general plan by the County in May 1994. The policies from that plan's Environmental Health and Safety Element relevant to the BDCP are listed here.

Policy 291: The County shall strive to meet federal and state air quality standards for local air pollutants of concern. In the event that standards are exceeded, the County shall require appropriate mitigation measures on new development.

Policy 294: The County shall require new development projects to include traffic and air pollutant reduction measures to help attain air quality standard s. For non-residential projects, these measures could include Transportation Demand Management programs such as ridesharing and transit promotion; for residential projects, these measures could include site plan features to reduce traffic trip generation such as mixed use development and transit-oriented development.

Policy 300: The County shall review proposed projects for their potential to generate hazardous air pollutants.

Policy 303: The County shall incorporate the provisions of the Association of Bay Area Government's (ABAG) Bay Area Air Quality Plan and the Bay Area Air Quality Management District's (BAAQMD) Air Quality and Urban Development Guidelines into project review procedures.

Policy 304: The County shall notify cities and the BAAQMD of proposed projects which may significantly affect air quality.

Policy 320: The County shall consider, in reviewing development projects and subdivision of agricultural lands, the severity of natural fire hazards, potential damage from wildland and

structural fires, the adequacy of fire protection services, road access, and the availability of an adequate water supply and pressure.

Policy 324: The County shall require the use of fire resistant building materials, fire-resistant landscaping, and adequate clearance around structures in "high" and "very high" fire hazard areas.

Policy 306: The County shall protect surface and groundwater resources by:

- preserving areas with prime percolation capabilities and minimizing placement of potential sources of pollution in such areas;
- minimizing sedimentation and erosion through control of grading, quarrying, cutting of trees, removal of vegetation, placement of roads and bridges, use of off-road vehicles, and animal-related disturbance of the soil;
- not allowing the development of septic systems, automobile dismantlers, waste disposal facilities, industries utilizing toxic chemicals, and other potentially polluting substances in creekside, reservoir, or high groundwater table areas when polluting substances could come in contact with flood waters, permanently or seasonally high groundwaters, flowing stream or creek waters, or reservoir waters; and,
- avoiding establishment of excessive concentrations of septic systems over large land areas.

Sacramento County

The Hazardous Materials and Safety Elements of the Sacramento County general plan, *Sacramento County General Plan of 2005 – 2030* (Sacramento County 2011) set forth goals and policies intended to help identify and assess the potential for hazards to occur in the county; to provide public preparedness and protection; and reduce threats to public safety. The following policies are relevant to the BDCP.

Hazardous Materials Element

HM-2. Improve cooperation, information gathering, and information availability within existing County programs.

HM-4. The handling, storage, and transport of hazardous materials shall be conducted in a manner so as not to compromise public health and safety standards.

HM-7. Encourage the implementation of workplace safety programs and to the best extent possible ensure that residents who live adjacent to industrial or commercials facilities are protected from accidents and the mishandling of hazardous materials.

HM-8. Continue the effort to prevent ground water and soil contamination.

HM-10. Reduce the occurrences of hazardous material accidents and the subsequent need for incident response by developing and implementing effective prevention strategies.

HM–9. Continue the effort to prevent surface water contamination.

HM-11. Protect residents and sensitive facilities from incidents which may occur during the transport of hazardous materials in the County.

HM-12. Continue the effort through the Sacramento Metropolitan Air Quality Management District (AQMD) to inventory and reduce toxic air contaminants as emission standards are developed.

HM-14. Support local enforcement of hazardous materials regulations.

Safety Element

SA-23. The County shall require that all new development meets the local fire district standards for adequate water supply and pressure, fire hydrants, and access to structures by firefighting equipment and personnel.

SA-24. The County shall require, unless it is deemed infeasible to do so, the use of both natural and mechanical vegetation control in lieu of burning or the use of chemicals in areas where hazards from natural cover must be eliminated, such as levees and vacant lots.

SA-27. The County shall require, where appropriate, the use of fire resistant landscaping and building materials for new construction developments that are cost effective.

SA-28. The County shall encourage and require, to the maximum extent feasible, automatic fire sprinkler systems for all new commercial and industrial development to reduce the dependence on fire department equipment and personnel.

SA-29. The County and fire districts will work together to regulate hazardous materials to mitigate emergency responses.

Yolo County

The Health and Safety Element of the Yolo County general plan (*2030 Countywide General Plan* [County of Yolo 2009]) establishes a goal, policies, and, as part of the implementation program, actions to ensure safety from hazardous materials in and around the county. The plan contains three policies relevant to the BDCP.

Policy HS-4.1: Minimize exposure to the harmful effects of hazardous materials and waste. Protect the community and the environment from hazardous materials and waste.

Policy HS-4.2: Inspect businesses regularly for compliance with their Hazardous Materials Inventory and Hazardous Materials Business Emergency Response Plan.

Policy HS-4.3: Encourage the reduction of solid and hazardous wastes generated in the county.

Solano County

The Public Health and Safety Element of the Solano County general plan, 2008 Solano County General Plan (Solano County 2008), sets forth goals and policies intended to help protect people and property from natural and human-made hazards, promote public health, and preserve air and water quality. Policies that may be applicable to the BDCP are as follows.

HS.P-20: Require that structures be built in fire defensible spaces and minimize the construction of public facilities in areas of high or very high wildfire risk.

HS.P-21: Prohibit non-farm-related development and road construction for public use in areas of extreme wildfire risk.

HS.P-22: Require new developments in areas of high and very high wildfire risk to incorporate fire-safe building methods and site planning techniques into the development.

HS.P-26: Minimize the risks associated with transporting, storing, and using hazardous materials through methods that include careful land use planning and coordination with appropriate federal, state, or County agencies.

HS.P-44: Minimize health impacts from sources of toxic air contaminants, both stationary (e.g., refineries, manufacturing plants) as well as mobile sources (e.g., freeways, rail yards, commercial trucking operations).

San Joaquin County

The Public Health and Safety element of the San Joaquin County general plan, *San Joaquin County Countywide General Plan*, contains policies intended to minimize the risks from natural and man-made hazards (San Joaquin County 1992). Policies that may be applicable to the BDCP are listed below.

Fire Safety

Policy 2: New development shall have water systems which meet County fire flow requirements or shall provide adequate onsite water storage, as determined by the County Fire Warden or by the local fire district having jurisdiction, if the district has a fire prevention bureau.

Policy 3: In areas with high and extreme wildfire hazards, the County shall limit development to rural residential densities or lower, or encourage cluster development and require on-site fire suppression measures.

Policy 5: All development shall have adequate access for fire fighting and emergency equipment.

Hazardous Materials and Wastes

Policy 1: Hazardous materials and wastes shall not contaminate air or water resources or soils.

Policy 2: The use, storage and disposal of hazardous materials and wastes shall be controlled to prevent harm to individuals.

Policy 3: Land uses and structures which contain hazardous materials or wastes which may be a safety hazard for nearby areas shall be located away from existing and planned populated areas.

Policy 4: The use of hazardous materials and the creation of hazardous wastes shall be minimized.

Policy 5: All development shall be consistent with the County's Waste Management Plans.

Contra Costa County

A comprehensive update to the *Contra Costa County General Plan 2005–2020* was adopted on January 18, 2005 to guide future growth, development, and resource conservation through 2020 (Contra Costa County 2005). The Safety Element established policies and programs to protect the community from risks associated with seismic, geologic, flooding, wildfire, and other hazards. Policies that may be relevant to the BDCP are listed below.

10-61: Hazardous waste releases from both private companies and from public agencies shall be identified and eliminated.

10-62: Storage of hazardous materials and wastes shall be strictly regulated.

10-63: Secondary containment and periodic examination shall be required for all storage of toxic materials.

10-64: Industrial facilities shall be constructed and operated in accordance with up-to-date safety and environmental protection standards.

10-67: In order to provide for public safety, urban and suburban development should not take place in areas where they would be subject to safety hazards from oil and gas wells. Development near oil and gas wells should meet recognized safety standards.

10-68: When an emergency occurs in the transportation of hazardous materials, the County Office of Emergency Services shall be notified as soon as possible.

24.3 Environmental Consequences

This section evaluates the potential effects of hazards and hazardous materials that could result from implementation of BDCP alternatives. An analysis of the consistency of the alternatives with applicable regulations is included. This analysis separates each of the alternatives' proposed impacts into three categories.

- Potential impacts occurring during the approximate 9-year span of water conveyance facilities construction (Conservation Measure 1).
- Potential impacts occurring during the long-term operation and maintenance of the water conveyance facilities (CM1).
- Potential impacts occurring during implementation of Conservation Measures 2-22.

Impacts associated with water conveyance facilities construction and operation and maintenance associated with CM1 are analyzed at a project level. Impacts associated with the restoration actions or Conservation Measures 2-22 are analyzed at a programmatic level.

Project effects associated with hazards or hazardous materials are not anticipated outside of the study area, in the Upstream of the Delta, including State Water Project (SWP) and Central Valley Project (CVP) waterways and reservoirs, or in the SWP/CVP Export Service Areas because hazards and hazardous materials effects are primarily associated with constructing and operating the proposed conveyance facilities. Because of this, SWP and CVP waterways and reservoirs and the SWP/CVP Export Service Areas are not discussed in this section.

Additionally, four proposed conservation measures related to reducing other stressors (listed below and described in detail in Chapter 3, *Description of the Alternatives*), would be implemented under all action alternatives but are not anticipated to result in any meaningful effects associated with hazards and hazardous materials in the study area. The actions implemented under these conservation measures do not entail physical activities that are likely to release hazardous materials to the environment, nor would they be expected to result in any direct or indirect, permanent or

substantial impacts creating hazards to the public or environment. As such, these measures will not be addressed further in this impact analysis:

- CM17 Illegal Harvest Reduction
- CM20 Recreational Users Invasive Species Program
- CM21 Nonproject Diversions
- CM22 Avoidance and Minimization Measures

24.3.1 Methods for Analysis

This section addresses the assessment methods used for the analysis of potential environmental impacts associated with construction and operation/maintenance of the proposed alternative. As a result of alternative implementation, potential impacts would be generated and/or created by reasonably foreseeable accident conditions involving the release of hazardous materials; routine transport, use, and disposal of hazardous materials; construction activities; and routine operation and maintenance activities.

In general, the analysis methodology was developed by reviewing various technical reports and other data sources including a Phase I Initial Site Assessment (ISA) and the BDCP conceptual engineering reports (CERs [discussed in Section 24.3.1.2]) that would be implemented as part of construction and operation/maintenance of the BDCP. A description of the ISA and other data sources relative to their use for the analysis of potential impacts are discussed below.

24.3.1.1 Phase I Initial Site Assessment

In May 2009 an ISA titled "Bay Delta Conservation Plan Draft Phase I Initial Site Assessment," was prepared by HDR, Inc. The ISA is included with this document as Appendix 24A, *Draft Phase 1 Initial Site Assessment*. The purpose of the ISA was to identify potential risk sites for contamination.

This ISA identified "Recognized Environmental Conditions" (REC) for three conveyance alignment options ("East Alignment", "West Alignment" and "Through Delta Alignment"), as they were known prior to May 2009, that may adversely affect construction or alternative alignment right-of-way acquisition (if required). The locations of these three alignments under consideration in 2009 differ somewhat from the four alignments being considered in this impact analysis. As such, once a BDCP conveyance alternative is chosen, a conveyance-alignment-specific (i.e., site-specific) Phase 1 ISA will be performed prior to construction. The information provided in the 2009 ISA is sufficient to identify the range of hazards and hazardous materials that should be considered in the study area.

In 2009, the ISA was conducted in the initial review of the Delta to determine if there were any areas that could be identified in the environmental record search. This ISA was conducted in general conformance with the scope and limitations of the American Society for Testing and Materials (ASTM) Standard Practice for Environmental Site Assessments (ESA): Phase I Environmental Site Assessment Process E 1527-05. The primary deviation from the E 1527-05 standard practice was the lack of owner interviews. Details regarding any additional exceptions or deletions from the standard practice are described in Appendix 24A.

Although the ISA identified RECs, the limited scope of this ISA allowed only for recognition of "sites of concern" (SOCs). Many of these SOCs constitute RECs for the study area, while others that might be RECs have insufficient information at this time to make that determination. A final determination

of whether a site constitutes a REC will be made later in the process, when a corridor-specific ISA is performed that includes more detailed site-specific investigation.

The ISA includes the results of environmental database searches that obtained location information for sites on regulatory hazardous materials databases. Maps corresponding with the East Alignment, West Alignment, and Through Delta Alignment (Separate Corridors) alternative corridor options were prepared in February 2009. These maps display the locations of historical and/or existing facilities that are listed on federal, state, and local hazardous materials databases. The results were generally used to determine if and where any component of the three alignment options would potentially encounter a facility listed on a hazardous materials database.

In addition, the ISA characterized the onsite and offsite impact probability for each SOC as either intermediate, low, medium, or high. The impact probability determinations of the ISA were used to determine if and where any component of the BDCP would potentially encounter a facility identified as a SOC. The findings of the ISA provided information on the potential for accidental releases of contaminants that were used historically, used currently, or exist at a given location due to construction activities associated with the BDCP. How this ISA was used in this analysis for the purpose of determining the potential for encountering an SOC during construction of the action alternatives is described below in Section 24.3.1.3, *Construction Effects*.

24.3.1.2 Conceptual Engineering Reports

The CERs were consulted for information on construction methods and materials, planned operational and maintenance parameters, and detailed information on potential features in the study area that may present hazards to the construction workers, the public and the environment.

24.3.1.3 Construction Effects

As discussed above, construction could potentially cause effects associated with the creation of hazards and accidental release of hazardous materials, as well as the routine transport, use, and disposal of hazardous materials. Specifically, potential effects would occur if construction resulted in one of the following conditions.

- Encounter contaminated soils, sediment, or groundwater resulting from historical land use practices (Figure 24-4).
- Release hazardous constituents into the environment as a result of the disturbance of previous or existing oil and gas wells (Figure 24-5).
- Release hazardous constituents into the environment as a result of the disturbance of pipelines or other subsurface infrastructure (Figure 24-3).
- Increase the risk of releases from vehicles carrying hazardous materials as a result of re-routing such vehicles around the construction activities.
- Improper use and/or disposal of hazardous materials.

Potential effects were determined using a variety of resources and standards as described below.

Release of Hazardous Materials

Construction impacts related to potential upset or accident conditions regarding transportation of hazardous materials via truck, trains, ships, and pipelines were evaluated qualitatively. Designated

and restricted transportation routes were mapped and compared with the construction footprint and the study area boundaries to evaluate the increased potential for releases/spills of hazardous materials as a result of traffic re-routing.

Potential Rerelease of Soil or Groundwater Contamination from Sites of Concern

Using GIS methods, mapped locations of SOCs identified in the 2009 ISA (Appendix 24A) were overlain with the current alignment alternatives for each of the water conveyance facilities construction footprints to assess the relative risk of encountering contaminated soil or groundwater during clearing, grading, excavation, and construction of the BDCP action alternatives. For the purpose of the impact analysis presented below, a conservative approach was taken, and SOCs within 0.5 mile of the construction footprint were considered to have the potential to pose a hazard due to migration of contaminants in groundwater. DTSC's Hazardous Waste and Substances Sites ("Cortese List"), compiled pursuant to California Government Code 65962.5, make up a subset of the mapped SOCs.

Oil and Gas Wells and Processing Facilities

Mapped locations of oil and gas wells and processing facilities were overlain with the construction footprints (Figure 24-5) to assess the relative risk of disturbing a well or encountering petroleum products or processing chemicals in soil or groundwater, respectively. The number of oil and gas wells within the construction footprints was obtained from engineering documents and the CERs. The relative risk to each alternative from encountering such point sources was assessed by determining whether wells had been identified by engineering staff or whether a processing facility is within one-half mile of the construction footprint.

Regional Pipelines and Electrical Transmission Lines

Mapped locations of regional pipelines and electrical transmission lines were overlain with the construction footprint (Figures 24-3 and 24-6, respectively) to assess the relative risk of disturbance of these utilities during construction. The relative risk to each alternative from encountering pipelines was assessed by determining whether pipelines or electrical transmission lines were within the construction footprint of the alternative. If so, the risk was assumed to be high.

Reusable Tunnel Material

Reusable tunnel material (RTM) is the by-product of tunnel excavation using an earth pressure balance tunnel boring machine. RTM from water conveyance facilities construction would be a mixture of soil cuttings and soil conditioning agents (water, foaming agents, and/or polymers). Tunnel boring operations would require the use of additives in order to control the behavior of excavated material. The additives would include water, surfactant foam, polymers, bentonite, or any combination thereof, although modern practice uses foams and polymers that are more environmentally friendly than bentonite, non-toxic and biodegradable. Surfactant foam is essentially a mixture of air and diluted foaming agent in water. Foam and/or polymers enhance the tunnel boring machine's ability to control face pressure. They are also used to reduce the level of torque required to cut the ground, which, in turn, reduces the required power input to the motors. Foam makes the cuttings more plastic and less permeable. Polymers are used to condition the soil, either by absorbing water or by affecting the deformation and flow characteristics of the soil. The main purpose of polymers is to help support the face and encourage loose, coarse-grained soils to move

smoothly through the excavation chamber. Polymers can also be used to reduce the tendency of soils with large amounts of highly plastic clay to stick to the cutterhead.

RTM may require chemical or physical treatment, in addition to drying, prior to returning to the environment. Environmental impacts associated with RTM management were analyzed based on stated toxicity of the additives, estimates of the volume of anticipated residue, and the CERs.

Sensitive Receptor Analysis

For the purposes of this analysis, schools, hospitals, and parks are considered sensitive receptors. Parks and schools not only provide a location for people to congregate, but generally these are places where sensitive populations, in terms of health, such as the elderly and children congregate when outdoors (parks) or indoors (children in school). Hospitals are areas where the infirm are housed, which, like children and the elderly, are more susceptible to the adverse effects of exposure to toxic chemicals and other pollutants/contaminants due to compromised immune systems, for example. For the purposes of this analysis, "parks" were limited to local community-type parks where the density of people would likely be greater than other areas that might be defined as a "park" for the purposes of recreation, such as marinas, wildlife areas, etc.

The proximity of the water conveyance facilities to schools, parks and hospitals was calculated using GIS methods to determine the distance from the construction footprints to sensitive receptors in the study area.

Wildland Fire Hazard Analysis

Wildland fire safety hazards were analyzed using GIS methods to map Fire Hazard Severity Zones. GIS maps were obtained from the California Department of Forestry and Fire Protection Fire Hazard Severity Zone Re-Mapping Project. County fire hazard maps from Alameda, Contra Costa, Sacramento, San Joaquin, Solano, and Yolo Counties were combined with alignments for each of the water conveyance facilities construction footprints and Restoration Opportunity Area (ROA) locations to assess the relative risk of wildland fire hazard throughout the study area.

Air Safety Hazard Analysis

Locations of airports were overlain with alternative footprints, and all airports within two miles of the construction footprint were identified. The airports were then evaluated to determine whether they were classified as public use airports by the FAA.

Routine Transport, Use, or Disposal of Hazardous Materials

The CERs and accompanying documentation were reviewed to determine construction materials and methods.

24.3.1.4 Operation/Maintenance Activities Impacts

The CERs were consulted for information on operation and maintenance activities, frequencies and materials, and expected operational and maintenance parameters that may present hazards to operations and maintenance workers, the public and the environment.

24.3.1.5 Cumulative Impacts Related to Hazards and Hazardous Materials

In addition to direct and indirect impacts, the section contains an analysis of the cumulative effects specific to hazards and hazardous materials. Cumulative impact assumptions include programs, projects, and policies included in Existing Conditions, No Action Alternative, and reasonably foreseeable probable future programs and projects (See Appendix 3D, *Defining Existing Conditions, the No Action/No Project, and Cumulative Impact Conditions,* for a list of the programs, projects, and policies considered in the cumulative analyses).

24.3.2 Determination of Effects

Potential impacts associated with hazards and hazardous materials were evaluated based on the eight criteria listed below. Each of these criteria was in turn used to capture potential effects during construction, operation, and maintenance of the water conveyance facilities (CM1), and implementation of the conservation measures (CM2–CM22), as applicable. Based on these criteria, implementation of one of the alternatives could result in an adverse effect (under NEPA) and a significant impact (under CEQA) if it would result in any one of the following conditions.

- Create a substantial hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or disruption of known road, rail, or river hazardous materials transport routes. For the purposes of this analysis, a "substantial hazard" is defined as the direct exposure of the public, including construction or operation and maintenance personnel, or surface water and groundwater to physical and/or chemical hazards (i.e., hazardous materials as defined by Title 22 of the California Code of Regulations, Division 4.5) through construction or operational activities or interference with hazardous materials transport routes.
- Create a substantial hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials to the environment. For the purposes of this analysis, a "substantial hazard" related to "the release of hazardous materials to the environment" is defined as circumstances in which construction or operational activities involving the use of hazardous materials or release of hazardous materials are located in, or where these hazardous materials could directly or indirectly negatively affect surface water bodies or groundwater or the public.
- Expose sensitive receptors (e.g., schools, hospitals or parks) located within 0.25 mile of a construction site to hazardous materials, substances, or waste.
- Be located on a known hazardous materials site or conflict with a known hazardous materials site and as a result would create a substantial hazard to the public or the environment through activities that could release materials from that site.
- Result in a safety hazard associated with an airport or private airstrip. For the purpose of this analysis, air "safety hazards" are defined as conditions in which high-profile construction equipment (200 feet or taller) or project structures could be located within two miles of an airport and would potentially result in aircraft accidents. Further, increasing the risk of bird-aircraft strikes as a result of BDCP implementation would also be considered an air safety hazard.
- Expose people or structures to a substantial risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed

with wildlands. For the purpose of this analysis, "substantial risk of loss, injury or death involving wildland fires" is defined as circumstances in which construction or operational activities would increase the potential for wildland fire hazards or would occur within an area designated as a High or Very High Fire Hazard Severity Zone.

The analysis of other resources that may be affected by hazards or hazardous materials, or are relevant to the analysis herein, are described in these nine chapters of this document and are not discussed further in this chapter's analysis.

- Chapter 6, *Surface Water,* describes the potential for an increase in exposure of people or structures to flooding due to construction or operations of the conveyance facilities or implementation of the habitat restoration facilities.
- Chapter 8, *Water Quality,* describes the potential changes in water quality and beneficial uses of water in the study area as a result of implementing the BDCP. Further, bioaccumulation models that link the concentration of methylmercury in the water to resultant concentrations in fish tissues for methylmercury are also presented in Chapter 8.
- Chapter 11, *Fish and Aquatic Resources*, discusses the potential for increased exposure of covered fish species in the study area to methylmercury as a result of implementing the BDCP action alternatives.
- Chapter 14, *Agricultural Resources*, describes agricultural practices that may have resulted in the release of agricultural chemicals including pesticides and herbicides.
- Chapter 22, *Air Quality and Greenhouse Gases,* describes potential public health risks related to hazardous emissions during construction and operation of the alternatives.
- Chapter 25, *Public Health,* discusses bioaccumulation of toxicants (e.g., methylmercury) in fish and aquatic organisms consumed by humans; the potential for BDCP action alternatives to mobilize or increase bioaccumulative constituents in the study area; pathogens in recreational waters; electromagnetic fields (EMFs) from proposed transmission lines that could potentially affect the public; potential drinking water quality issues related to the proposed BDCP actions; and potential hazards associated with vector-borne diseases.
- Chapter 26, *Mineral Resources,* describes the occurrence and production of hazardous materials such as oil and natural gas.
- Chapter 28, *Environmental Justice,* describes fish consumption rates in minority populations and concerns that these populations in the Delta have about potential mercury and pesticide contamination in the fish they consume.

Compatibility with Local Plans and Policies

Constructing the proposed water conveyance facilities (CM1) and implementing conservation measures CM2–22 could result in potential incompatibilities with local plans and policies related to protecting communities and the environment from hazards such as the release of hazardous materials and wildfire. Plans and policies of counties that coincide with the study area provide guidance related to various hazards and safety issues, as detailed in Section 24.2.3, *Local Plans, Policies, and Regulations*. This section summarizes ways in which BDCP is compatible or incompatible with those plans and policies. Potential incompatibilities with local plans or policies, or with those not binding on the state or federal governments, do not necessarily translate into adverse environmental effects under NEPA or CEQA. Even where an incompatibility "on paper" exists, it does

not by itself constitute an adverse physical effect on the environment, but rather may indicate the potential for a proposed activity to have a physical effect on the environment. The relationship between plans, policies, and regulations and impacts on the physical environment is discussed in Chapter 13, *Land Use*, Section 13.2.3.

The general plans of Alameda County (*East County Area Plan*), Sacramento, Yolo, Solano, San Joaquin, and Contra Costa Counties have elements addressing health, safety, and hazardous materials. They variously address concerns about traffic management; wildfire risk; protecting soils and surface and groundwater resources from contamination; and protecting individuals from harmful exposure to hazardous substances. Policies and regulations for hazardous materials may require or advocate information sharing among programs and prompt contact with emergency services offices in event of accidents; safe handling, transportation, and storage of hazardous materials; workplace safety programs that protect residents and properties adjacent to worksites involving hazardous materials; efforts to prevent groundwater, surface water, and soil contamination; hazardous materials accident prevention; and protecting sensitive residents and facilities from transportation incidents involving hazardous materials. They advocate minimizing use of hazardous substances and creation of waste; appropriate location and containment; adherence to the most up-to-date safety standards for construction and operation; and inspecting businesses for compliance with Hazardous Materials Inventory and Hazardous Materials Business Emergency Response Plans. Regarding fire safety, the counties variously require or encourage new developments to meet fire district standards; have adequate water systems and access for firefighting and emergency equipment; use natural and mechanical methods of vegetation control (in lieu of burning or chemicals) to eliminate fire hazards; to use fire resistant landscaping and building materials and methods; and the use of automatic fire sprinkler systems.

BDCP is compatible with these county policies. The selected alternative would include mitigation measures and environmental commitments designed to avoid or minimize hazards to people and the environment. To protect soil, surface water, groundwater, and sensitive receptors (effects on which are assessed under Impacts HAZ-1, HAZ-2, HAZ-6, HAZ-7) during construction, operations, and maintenance of the water conveyance facilities and conservation measures, BDCP proponents would implement Mitigation Measure HAZ-1a to identify and remediate for soil and groundwater contaminants prior to beginning construction. Mitigation Measure HAZ-1b would survey potential demolition sites for hazardous materials prior to demolition, and dispose of them according to federal, state, and local regulations. Mitigation Measure HAZ-6 would ensure dewatered solids are tested prior to disposal and disposed of in accordance with federal, state, and local regulations, thereby avoiding release of hazardous substances into the environment. BDCP proponents would also implement Mitigation Measure TRANS-1a: *Implement a site specific construction traffic management plan*, which, among other traffic-related measures (discussed in Chapter 19, *Transportation*) would help minimize BDCP construction-related disruption to and/or interference with hazardous materials transport routes in the study area. Mitigation Measure UT-6a*: Verify locations of utility infrastructure* and UT-6c: *Relocate utility infrastructure in a way that avoids or minimizes any effect on worker and public health and safety*, address safety issues related to oil and gas wells and pipelines, and electrical transmission lines (as discussed under Impact HAZ-3). In addition, Mitigation Measure HAZ-8: *Consult with individual airports and USFWS, and other relevant organizations* will minimize, to the greatest extent possible, hazards related to increased bird-aircraft strikes as a result of implementing conservation measures in the vicinity of airports (this hazard is analyzed under Impact HAZ-8).

BDCP proponents also would incorporate environmental commitments intended to avoid, prevent, or minimize hazardous spills related to water conveyance construction or implementing conservation measures, and/or mitigate for such occurrences (these potential effects are discussed under Impacts HAZ-1, HAZ-6, HAZ-7). Environmental commitments include developing and implementing Stormwater Pollution Prevention Plans (SWPPPs); Spill Prevention, Containment, and Countermeasure Plans (SPCCPs); Hazardous Materials Management Plans (HMMPs); and a Barge Operations Plan. Furthermore, environmental commitments include employing best management practices to treat, reuse, or dispose of spoils, RTM, and dredged material in accordance with applicable regulations. The BDCP proponents will also coordinate planning, engineering, design and construction, operation, and maintenance phases of the alternative with the appropriate agencies.

BDCP would also be compatible with county plans and policies in terms of fire protection because the proposed water conveyance facilities would not be located in a High or Very High Fire Hazard Severity Zone (as described under Impact HAZ-5). Precautions would be taken to prevent wildland fires during construction, operation, and maintenance of the water conveyance facilities, in full compliance with Cal-OSHA standards for fire safety and prevention. Furthermore, an environmental commitment, *Develop and Implement a Fire Prevention and Control Plan* (FPCP) would ensure that people or structures would not be subject to a substantial risk of loss, injury or death involving wildland fires. Appendix 3B, *Environmental Commitments*, provides details on all environmental commitments that would be incorporated into the BDCP.

24.3.3 Effects and Mitigation Approaches

24.3.3.1 No Action Alternative

As described in Chapter 3, *Description of Alternatives*, the No Action Alternative describes expected future conditions resulting from a continuation of existing policies and programs by federal, state, and local agencies in the absence of the BDCP alternatives as of the year 2060. The No Action Alternative assumptions are limited to those assumptions consistent with Existing Conditions, programs adopted, permitted or under construction during the early stages of development of the EIR/EIS, and foreseeable changes in development that would occur with or without the BDCP. For the BDCP, the No Action Alternative includes clearly defined management or operational plans, including facilities under construction as of February 13, 2009. For a full description of conditions under the No Action Alternative, see Appendix 3D, *Defining Existing Conditions, No Action Alternative, No Project Alternative, and Cumulative Impact Conditions*.

A selection of the programs, plans, and projects included under the No Action Alternative are summarized in Table 24-2, along with their anticipated effects regarding hazards and hazardous materials. A complete list and description of programs and plans considered under the No Action Alternative is provided in Appendix 3D, *Defining Existing Conditions, the No Action/No Project Alternative, and Cumulative Impact Conditions.*

Table 24-2. Hazards and Hazardous Materials Effects from the Plans, Policies, and Programs under the No Action Alternative

Agency	Program/ Project	Status	Description of Program/Project	Hazards and Hazardous Materials Effects
Contra Costa Water District	Contra Costa Canal Fish Screen Project	Completed in 2011.	The project installed a fish screen at the Contra Costa Canal diversion at Rock Slough.	Potential for release of hazardous materials (e.g., fuel and oil) to surface water and adjacent land during installation of fish screen.
Contra Costa Water District, U.S. Bureau of Reclamation, and California Department of Water Resources	Middle River Intake and Pump Station (previously known as the Alternative Intake Project)	Completed in 2011.	The project includes a 250 cfs pump station, a screened intake structure along Victoria Canal on Victoria Island, and a pipeline across Victoria Island tunneled under Old River to the District's Old River Pump Station where it connects to existing conveyance facilities.	Potential for release of hazardous materials (e.g., fuel and oil) to Middle River and adjacent land during construction of intake and pump station, as well as disturbance of contaminated soil during construction activities (e.g., grading and excavation).
Freeport Regional Water Authority and U.S. Bureau of Reclamation	Freeport Regional Water Project	Completed in 2010.	The project includes an intake/pumping plant near Freeport on the Sacramento River and a conveyance structure to transport water through Sacramento County to the Folsom South Canal. The pumping plant diverts 185 million gallons per day.	Potential for release of hazardous materials (e.g., fuel and oil) to Sacramento River and land in project area during construction, as well as disturbance of contaminated soil during construction activities (e.g., grading and excavation).
City of Stockton	Delta Water Supply Project (Phase 1)	Completed in 2012.	This project consists of a new intake structure and pumping station adjacent to the San Joaquin River; a water treatment plant along Lower Sacramento Road; and water pipelines along Eight Mile, Davis, and Lower Sacramento Roads.	Potential for release of hazardous materials (e.g., fuel and oil) to the San Joaquin River and adjacent areas where construction and maintenance occur, as well as disturbance of contaminated sediment and soil during construction.
Reclamation District 2093	Liberty Island Conservation Bank	Completed in 2011.	The project consists of restoration of 186 acres on Liberty Island in unincorporated Yolo County. Restoration was focused on enhancing and creating tidal aquatic habitat suitable for special-status fish species (including salmon and delta smelt).	Potential for release of hazardous materials (e.g., fuel and oil) to adjacent water bodies and land during construction/ restoration activities (e.g., grading), as well as disturbance of contaminated soil during construction.
Tehama Colusa Canal Authority and U.S. Bureau of Reclamation	Red Bluff Diversion Dam Fish Passage Project	Completed in 2012.	Proposed improvements include modifications made to upstream and downstream anadromous fish passage and water delivery to agricultural lands within CVP.	Potential for release of hazardous materials (e.g., fuel and oil) to the Sacramento River and land during construction of the fish ladders and pump station, as well as disturbance of contaminated soil and sediment during construction activities (e.g., grading and excavation).

Agency	Program/ Project	Status	Description of Program/Project	Hazards and Hazardous Materials Effects
U.S. Bureau of Reclamation and State Water Resources Control Board	Battle Creek Salmon and Steelhead Restoration Project	Construction is being implemented in three phases and is currently underway. The final phase is estimated to occur between 2013 and 2015.	This project includes modification of facilities at Battle Creek Hydroelectric Project diversion dam sites located on the North Fork Battle Creek, South Fork Battle Creek, and Baldwin Creek. Fish screens and ladders will be installed at various location; a fish barrier will be installed on Baldwin Creek; an Inskip Powerhouse tailrace connector and bypass will be installed on the South Fork; a South Powerhouse tailrace connector will be installed; and Lower Ripley Creek Feeder, Soap Creek Feeder, Coleman and South diversion dams, and appurtenant conveyance systems will be removed.	Potential for release of hazardous materials (e.g., fuel and oil) to Battle Creek, six tributaries, and construction areas during construction/restoration activities, as well as disturbance of potentially contaminated sediment.
U.S. Bureau of Reclamation, California Department of Fish and Wildlife, and Natomas Central Mutual Water Company	American Basin Fish Screen and Habitat Improvement Project	Completed 2012.	This three-phase project includes consolidation of diversion facilities; removal of decommissioned facilities; aquatic and riparian habitat restoration; and installing fish screens in the Sacramento River. Total project footprint encompasses about 124 acres east of the Yolo Bypass.	Potential for release of hazardous materials (e.g., fuel, solvents, and oil) to the Sacramento River and construction areas during installation of fish screens and construction/restoration activities, as well as disturbance of contaminated soil and sediment.
U.S. Bureau of Reclamation	Delta-Mendota Canal/California Aqueduct Intertie	Completed in 2012.	The purpose of the intertie is to better coordinate water delivery operations between the California Aqueduct (state) and the Delta-Mendota Canal (federal) and to provide better pumping capacity for the Jones Pumping Plant. New project facilities include a pipeline and pumping plant.	Potential for release of hazardous materials (e.g., fuel, oil, paints, solvents) during construction, and hazards to the public due disturbance of infrastructure (California-Oregon Transmission Project transmission lines).
Zone 7 Water Agency and Department of Water Resources	South Bay Aqueduct Improvement and Enlargement Project	Completed in 2012.	This project includes upgrades to the South Bay Pumping Plant; raised linings on open channel sections of the aqueduct; the addition of a 450 acre-foot Dyer Reservoir; and 4.5 miles of pipeline connecting to the South Bay Pumping Plant	Potential for release of hazardous materials (e.g., fuel, oil, solvent, paints) to surface waters and construction areas construction activities, as well as disturbance of potentially contaminated soils during grading, excavation, and other ground-disturbing activities.
NMFS/USFWS	2008 and 2009 Biological Opinions	Ongoing.	The Biological Opinions issued by NMFS and USFWS establish certain RPAs and RPMs to be implemented requiring habitat restoration	Potential for release of hazardous materials (e.g., fuel and oil) in construction areas during construction/restoration activities, as well as disturbance of potentially contaminated sediment. Additionally, restoration for wildlife may create a risk of increased bird-strikes at local airports.

Any projects that are planned or currently under way that involve construction and operation and maintenance activities may result in potential hazards to the environment or public, and the potential exists for similar effects analyzed in this EIR/EIS. Further, projects under the No Action Alternative occurring in the study area may encounter contaminated soils and groundwater during construction. As described in Section 24.1, past industrial and agricultural practices have contaminated soils and/or groundwater in the study area. If contamination exists, rerelease of these contaminants could present hazards to project construction worker, the general public, and/or the environment. Known and suspected contaminated soils may require sampling and analysis to determine appropriate handling in accordance with regulations in place at the time of construction. Where known or suspected contaminated groundwater would be encountered and managed during construction, sampling and determination of handling options would be required. Other potential environmental consequences related to hazards and hazardous materials from activities (construction and/or operations and maintenance) associated with programs, projects, and policies in the study area included in the No Action Alternative could include the following.

- Release of hazardous materials (including flammable gases) from disturbance of regional fuel pipelines during construction of any projects requiring excavation in the study area.
- Accidental releases of hazardous materials (e.g., fuels, solvents, and lubricants) and/or improper disposal of hazardous materials during construction and/or operations and maintenance of any projects in the study area.
- Release of oils, solvents, and fuels from maintaining and cleaning equipment or vehicles associated with the construction or operations and maintenance of any program and project activities.

The relative risks of release of hazardous constituents or subjecting the environment and public to other hazards from construction, operations, and maintenance of projects and programs under the No Action Alternative cannot be determined at this time; however, they would be similar in nature, but may vary in magnitude, to the risks identified for the BDCP action alternatives. For instance, construction activities requiring the use and maintenance of construction equipment would be anticipated to require similar hazardous materials, including fuel, oils, and lubricants. Hazardous materials like paints, solvents, and sealants would also be anticipated to be used in the construction and maintenance of structures (e.g., pumping plants, intakes) associated with the projects, programs, and plans considered under the No Action Alternative. As under the BDCP action alternatives, these materials could be accidentally released into the environment during their use. Projects requiring demolition, excavation or grading would also carry risks similar to those identified for the BDCP action alternatives. In the course of these activities, construction crews may encounter hazardous materials in existing structures (i.e., agricultural storage facilities) and infrastructure (i.e., transmission lines or pipelines) or may encounter contaminated soil, groundwater, or sediment. Depending on the location for the implementation of these activities, sensitive receptors could be affected by the release of hazardous materials.

Relative to the BDCP, it is reasonable to assume that the risks of release of hazardous chemicals or exposing the public or environment to hazards during construction and operation of smaller scale projects, for example the Delta Water Supply Project (Phase 1), would be lower. The BDCP is a large-scale project involving extensive construction of water conveyance features over an expansive area and a relatively long time period (9 years); thus, it is reasonable to assume that the potential for hazard or hazardous materials exposure risks associated with BDCP construction and operations would be substantially greater relative to a smaller scale project or program. However, were any of

the aforementioned environmental consequences to occur during implementation of the No Action Alternative, depending on the nature and severity of the impact, an adverse effect could nonetheless result, albeit potentially smaller in scale and more confined in geographic scope. Generally, though, impacts would be avoided through adherence to applicable federal, state, and local regulations; project-specific design; and implementation of best management practices (BMPs), environmental commitments, and/or mitigation, including HMMPs, SWPPPs, and SPCCPs. These practices/measures are intended to avoid, prevent, or minimize hazardous spills and construction-related hazards and/or mitigate for such occurrences. Each project implemented under the No Action Alternative would require its own separate environmental compliance process. Therefore, there would be no adverse effect related to hazards or hazardous materials with regards to implementation of the No Action Alternative absent a catastrophic event related to climate change or a seismic event (discussed below).

Climate Change and Catastrophic Seismic Risks

The Delta and vicinity are within a highly active seismic area, with a generally high potential for major future earthquake events along nearby and/or regional faults, and with the probability for such events increasing over time. Based on the location, extent and non-engineered nature of many existing levee structures in the Delta area, the potential for significant damage to, or failure of, these structures during a major local seismic event is generally moderate to high. In the instance of a large seismic event, levees constructed on liquefiable foundations are expected to experience large deformations (in excess of 10 feet) under a moderate to large earthquake in the region. (See Appendix 3E, *Potential Seismic and Climate Change Risks to SWP/CVP Water Supplies* for more detailed discussion) To reclaim land or rebuild levees after a catastrophic event due to climate change or a seismic event would potentially create a substantial hazard to the public or the environment through the release of hazardous materials or by other means during construction. In the instance of levee failure causing flooding, inundation could result in the release of a range of hazardous materials including, but not limited to, fuel, chemicals, fertilizers, and pesticides. A large scale seismic event could also rupture gas and oil pipelines resulting in exposure to hazardous materials. Thus, there would be a potential for adverse effects to the environment and public in the case of a catastrophic event due to climate change or a seismic event.

CEQA Conclusion: Implementation of programs, policies, and projects under the No Action Alternative in the study area would have the potential for significant impacts on the public or the environment related to hazards and/or hazardous materials (e.g., through the inadvertent release of fuels or lubricants during construction). However, these impacts would be smaller in scale and more confined in geographic scope relative to the BDCP action alternatives. Projects implemented under the No Action Alternative would require their own separate environmental compliance processes; would be required to adhere to applicable federal, state, and local regulations; and would incorporate applicable BMPs, environmental commitments, and/or mitigation intended to avoid, prevent, or minimize hazardous spills and construction-related hazards and/or mitigate for such occurrences, which would help ensure that these types of impacts are less than significant.

24.3.3.2 Alternative 1A—Dual Conveyance with Pipeline/Tunnel and Intakes 1–5 (15,000 cfs; Operational Scenario A)

Impact HAZ-1: Create a Substantial Hazard to the Public or the Environment through the Release of Hazardous Materials or by Other Means during Construction of the Water Conveyance Facilities

NEPA Effects: This impact describes and addresses, for the duration of construction of the water conveyance facilities, potential hazards associated with the routine use of hazardous materials; natural gas accumulation in tunnels; existing contaminants in soil, groundwater or sediment; hazardous constituents present in RTM; infrastructure containing hazardous materials; and the routine transport of hazardous materials.

Routine Use of Hazardous Materials

As described in Chapter 3, *Description of Alternatives*, during construction of Alternative 1A, five locations would be designated as fueling stations. Each fueling station would occupy approximately two acres and would be located adjacent to a concrete batch plant; both the fueling station and the batch plant would be temporary and would only be in place for the duration of construction. Fueling station locations are shown in Figure 24-7 and in Figure M3-1 in the Mapbook Volume. Two fueling stations would be established in currently rural areas on the northern end of the Alternative 1A water conveyance alignment. One would be located less than 0.5 miles northwest of Intake 2, just east of SR 160 across the Sacramento River from Clarksburg, and the other would be located between Intakes 4 and 5, southeast of SR 160. In addition, two fueling stations would be located along the length of the tunnel alignment (one on southeastern Tyler Island and one on northeastern Bacon Island), and one fueling station would be located immediately southeast of Byron Tract Forebay near the intersection of the Byron Highway and Mountain House Road. It is anticipated that equipment and vehicles would be maintained in the field and at on-site maintenance facilities. Bulk fuel would be stored at fueling stations and would potentially pose the risk of vehicle fueling spills and leakage from above-ground storage tanks at fueling stations.

In addition to fuel use and bulk fuel storage, oils, lubricants, and other hazardous materials would be stored onsite and used in equipment, such as compressors, generators, pile drivers, cranes, forklifts, excavators, pumps, or soil compactors throughout the study area during construction. Spills and releases could occur during transfer and use of these materials in the field and over water or adjacent to waterways. Hazardous materials, including paints, solvents, and sealants, would be used in construction of water conveyance facilities features (e.g., intakes, pumping plants, conveyance piping). Fueling and transfer of oils, lubricants and other materials would be performed on work barges and watercraft used for building temporary and permanent in-river facilities, such as intake structures, and could be spilled or otherwise released to the environment and result in a hazard.

Construction equipment maintenance is expected to be performed in the field and in central maintenance facilities operated by contractors during construction of the water conveyance facilities. While equipment could be maintained at any work area identified for this alternative, the highest risk of hazards related to maintenance activities would be anticipated to occur at those sites where the duration and intensity of construction activities would be greatest, including intake and intake pumping plant sites along the east bank of the Sacramento River, an intermediate forebay (and pumping plant) site west of South Stone Lake and east of the Sacramento River, and the site of Byron Tract Forebay adjacent to and south of Clifton Court Forebay. Construction equipment

maintenance activities would also be expected to be performed at work areas related to main tunnel construction shaft sites on the northern Brannan-Andrus Island, southern Tyler Island, western Venice Island, eastern Bacon Island, and western Victoria Island. For a map of all permanent facilities and temporary work areas associated with this conveyance alignment, see Figure M3-1 in the Mapbook Volume. Equipment maintenance activities at these facilities would likely include rebuilding pumps or motors, maintaining equipment hydraulic systems, minor engine repairs and routine lubrication, and replacing worn parts. Spills and other accidental releases of degreasers, fuels, oils or lubricants could result in minor, temporary hazards to workers immediately adjacent to these releases. However, because these chemicals would be used in small quantities by trained personnel, and because BMPs to minimize the potential for these types of accidents and to contain and remediate hazardous spills, should they occur, would be implemented, as set forth in Appendix 3B, *Environmental Commitments*, it is unlikely that the general public or the environment would be adversely affected.

As described in Appendix 3B, *Environmental Commitments*, SWPPPs, HMMPs, and SPCCPs would be developed and implemented by DWR as part of the construction process for Alternative 1A. The SPCCPs would minimize effects from spills of oil, oil-containing products, or other hazardous chemicals during construction and operation of the project. The plan would be comprehensive in that it would address actions used to prevent spills and specify actions that will be taken should any spills occur, including emergency notification procedures. BMPs to be implemented as part of the SPCCPs include, but would not be limited to the following.

- Personnel will be trained in emergency response and spill containment techniques, and will also be made aware of the pollution control laws, rules, and regulations applicable to their work.
- When transferring oil or other hazardous materials from trucks to storage containers, absorbent pads, pillows, socks, booms or other spill containment material will be placed under the transfer area.
- Absorbent pads, pillows, socks, booms, and other spill containment materials will be maintained at the hazardous materials storage sites for use in the event of spills.
- Contaminated absorbent pads, pillows, socks, booms, and other spill containment materials will be placed in leak-proof sealed containers until transport to an appropriate disposal facility.
- In the event of a spill, personnel will identify and secure the source of the discharge and contain the discharge with sorbents, sandbags, or other material from spill kits. In addition, regulatory authorities (e.g., National Response Center) will be contacted if the spill threatens navigable waters of the United States or adjoining shorelines, as well as other response personnel.
- Equipment used in direct contact with water would be inspected daily to prevent the release of oil.
- Oil-absorbent booms would be used when equipment is used in or immediately adjacent to waters.
- All reserve fuel supplies would be stored only within the confines of a designated staging area.
- Fuel transfers would take place a minimum distance from exclusion/drainage areas and streams, and absorbent pads would be placed under the fuel transfer operation.
- Equipment would be refueled only in designated areas.

- Staging areas would be designed to contain contaminants such as oil, grease, and fuel products so that they do not drain toward receiving waters or storm drain inlets.
- All stationary equipment would be positioned over drip pans.

Containment and cleanup of spills from equipment storage, oil storage, fueling, and maintenance would be managed in accordance with the plans summarized below and presented in detail in Appendix 3B, *Environmental Commitments*.

The SWPPP objectives would be to: (1) identify pollutant sources associated with construction activities and operations that could affect the quality of stormwater; and (2) identify, construct, and implement stormwater pollution prevention measures to reduce pollutants in stormwater discharges during and after construction. It is anticipated that multiple SWPPPs will be prepared for the overall BDCP project construction, with a given SWPPP prepared to cover a particular water conveyance component (e.g., intermediate forebay) or groups of components (e.g., intakes). Generally, the SWPPP would include the provisions listed below.

- A description of potential stormwater pollutants from erosion.
- A description of the management of dredged sediments and hazardous materials present on site during construction (including vehicle and equipment fuels).
- Details of how the sediment and erosion control practices would comply with state and federal water quality regulations.
- A visual monitoring program and a chemical monitoring program for "non-visible" pollutants if the BMPs are breached.

BMPs in the SWPPPs would include but not be limited to the following measures.

- Capture sediment via sedimentation and stormwater detention features.
- Implement concrete and truck washout facilities and appropriately sized storage, treatment, and disposal practices.
- Clean or replace sanitation facilities (as necessary) and inspect regularly for leaks/spills.
- Cover waste disposal containers during rain events and at the end of every day.
- Store chemicals in watertight containers.
- Reclaim or land-apply construction site dewatering discharges to the extent practicable, or use for other construction purposes (e.g., dust control).
- Implement appropriate treatment and disposal of construction site dewatering from excavations to prevent discharges to surface waters.
- Equipment and materials for cleanup of spills shall be available on site.
- Spills and leaks shall be cleaned up immediately and disposed of properly.
- Ensure that there are trained spill response personnel available.

The HMMPs would provide detailed information on the types of hazardous materials used or stored at all sites associated with the water conveyance facilities (e.g., intake pumping plants, maintenance facilities); phone numbers of city, county, state, and federal agencies; primary, secondary, and final cleanup procedures; emergency-response procedures in case of a spill; and other applicable

information. The HMMPs would include measures to minimize the possible environmental impacts associated with spills or releases of hazardous materials (e.g., solvents, paints) during routine construction and operations and maintenance activities. These measures would include but not be limited to those listed here (see Appendix 3B, *Environmental Commitments* for additional detail).

- Fuel, oil, and other petroleum products will be stored only at designated sites.
- Hazardous materials containment containers will be clearly labeled with the material's identity, handling and safety instructions, and emergency contact.
- Storage and transfer of hazardous materials will not be allowed within 100 feet of streams or sites known to contain sensitive biological resources except with the permission of Department of Fish and Wildlife.
- The accumulation and temporary storage of hazardous wastes will not exceed 90 days.
- Soils contaminated by spills or cleaning wastes will be contained and removed to an approved disposal site.
- Hazardous waste generated at work sites, such as contaminated soil, will be segregated from other construction spoils and properly handled, hauled, and disposed of at an approved disposal facility by a licensed hazardous waste hauler in accordance with state and local regulations. The contractor will obtain permits required for such disposal.
- Emergency spill containment and cleanup kits will be located at the facility site. The contents of the kit will be appropriate to the type and quantities of chemical or goods stored at the facility.

Implementation of BMPs in these plans would reduce the potential risk of a release of stored fuels, oils, lubricants or other hazardous materials used during construction and construction equipment operation and maintenance.

Natural Gas Accumulation in Water Conveyance Tunnels

Under Alternative 1A, deep water conveyance tunnels would be constructed. One tunnel would run from south of Scribner Road, east of the Sacramento River in Sacramento County and would run south to the intermediate forebay, south of the community of Hood and northwest of South Stone Lake. Another tunnel would reach from north of Lambert Road (west of South Stone Lake), crossing Pierson District, Grand Island, Brannan-Andrus Island, Tyler Island, Staten Island, Bouldin Island, Venice Island, Mandeville Island, Bacon Island, Woodward Island, Victoria Island, and Coney Island, before ending south of Clifton Court Forebay. For a map of the proposed tunnel alignment, see Figure M3-1 in the Mapbook Volume. During construction, the potential to encounter gases, which could enter and accumulate to flammable or explosive concentrations in tunnel bores or other excavations, could exist. These gases could include methane generated by peat and organic soils or other natural gases, which could seep from deep natural gas reservoirs either through improperly sealed boreholes or natural conduits such as faults and fractures. As previously described, the thickness of peat and organic soils increases to the west across the Delta, and approximately 3,400 oil and gas wells are located throughout the study area. Engineering reconnaissance indicates six active and 19 inactive oil or gas wells present within the construction footprint for the Alternative 1A water conveyance alignment (California Department of Water Resources 2010a:13-1); oil and gas wells along the water conveyance facilities alignments are shown in Figure 24-5. Gas fields in the United States are typically located at depths greater than 3,000 feet (U.S. Energy Information Administration 2012). Because the tunnels would be approximately 150 to 160 feet below ground, it

is unlikely that a gas field would be encountered during tunneling. However, an evaluation of how these gas fields could affect the constructability of the tunnels would be prepared during the geotechnical investigations performed in the design phase of the water conveyance facilities. For water conveyance facilities construction under Alternative 1A, the water conveyance tunnels may receive a Cal-OSHA classification of "gassy or extrahazardous" due to the presence of natural gas wells along the alignment. If the tunnels receive a "gassy or extrahazardous" classification, specialized tunneling equipment, which would need to be approved by the Mine Safety and Health Administration (MSHA), would be required, as would gas detection equipment on the tunnel boring machines, an automatic shutoff of the equipment if gas were detected, and fireproof construction equipment. In addition, the contractor would be required to follow gas monitoring and fire prevention requirements mandated by Cal-OHSA based on the tunnel gas classification in accordance with The Tunnel Safety Orders set forth in the California Code of Regulations (Title 8, Division 1, Chapter 4, Subchapter 20, Article 8, "Tunnel Classifications" [see Section 24.2.2.13]). The tunnel ventilation system would include steel ducts capable of reversing the direction of air in order to help control potential fires in the tunnel. Tunnels would be ventilated according to Cal-OSHA requirements. Cal-OSHA requires providing at least 200 cubic feet per minute (fpm) of fresh air per person working underground. Additionally, a minimum air velocity of 60 fpm is required to dilute any contaminated gas present within the tunnel. Further, ventilation hardware would comply with Cal-OSHA requirements. The hardware would include steel ducts and be capable of reversing the direction of air flow (for fire control within the tunnel). Adherence to these regulations would reduce the potential for hazards from the accumulation of natural gas in tunnels.

Existing Contaminants in Soil, Groundwater, or Sediment

There may be contaminated areas within the study area that have not been previously identified because of inadequate or missing data or poor record keeping. During construction of Alternative 1A, contaminated soils, sediments and groundwater may be encountered where historical releases have occurred, such as former storage and distribution facility locations.

The lateral and vertical extent of any historical soil-, sediment- or water-based contamination within or near the construction footprint is unknown. Although, where it exists, soil contamination is likely to be highly localized, while groundwater contamination could have migrated substantial distances and therefore be more widespread than soil contamination. Locations of known oil and gas processing facilities (Figure 24-1) are considered a separate category of SOC due to the potential for spills and leaks at these locations. The lateral and vertical extent of any existing contamination that may be present at these sites is unknown. The number of SOCs may change during right-of-way evaluation, land acquisition and preconstruction site-clearance investigations or during construction. Additional SOCs may be identified during these activities, and currently identified SOCs may be determined innocuous after site-specific field investigation and testing.

It is likely that contaminated sediments (e.g., persistent pesticide- and mercury-contaminated sediments) would be resuspended during sediment-disturbing activities related to in-river construction activities (e.g., cofferdam construction at intake sites). However, concentrations of potential contaminants in the sediments where in-river construction activities would be taking place are not known; therefore, the associated risk cannot be identified. In general, sediment-bound pesticide concentrations in rivers and estuaries vary by season (with rain and the seasonal variation in pesticide applications) and are episodic; pesticide concentrations in sediment are generally higher during rainy season at the onset of winter rains (Bergamaschi et al. 2007). One study suggests that the mercury concentration in suspended sediment at Freeport, just upstream of the

intake locations, is less than 10 ng/l, below the recommended criterion of 50 ng/l (Domagalski 2001). Also, mobilization of potentially contaminated sediments would be directly related to levels of turbidity and suspended sediments resulting from construction activities. Although resulting turbidity has not been modeled, it is anticipated to be low given the permit requirements for controls stipulating that dredging activities be conducted and monitored such that turbidity not increase in receiving waters, measured 300 feet downstream or that silt curtains be used to control turbidity and reduce the associated mobilization of potentially contaminated sediments.

Mobilization of potentially contaminated sediments is unlikely to be a hazard concern for construction workers because it is not expected that workers would be in direct contact with sediments during in-river construction activities. Similarly, resuspension of potentially contaminated sediment is unlikely to pose a hazard to the general public or the environment because it would be confined to a relatively small area during construction and would be temporary (occurring during in-river work and potentially for a few hours following cessation of in-river construction activities). Further, as described in Appendix 3B, *Environmental Commitments,* for any BDCP dredging activity, the BDCP proponents would prepare and implement a site-specific pre-dredge sampling and analysis plan (SAP), which would be developed and submitted by the contractors required per standard DWR contract specifications Section 01570. As part of the SAP, prior to any dredging activities, sediment would be evaluated for contaminants that may impact water quality from the following discharge routes.

- In-stream discharges during dredging.
- Direct exposure to contaminants in the material through ingestion, inhalation or dermal exposure.
- Effluent (return flow) discharge from an upland disposal site.
- Leachate from upland dredge material disposal that may affect groundwater or surface water.

Additionally, BMPs, including those listed below, would be implemented during in-river construction activities to ensure that disturbed sediment was contained, thus reducing the risk of sediment dispersal away from the immediate area (see Appendix 3B, *Environmental Commitments*).

- Conduct dredging activities in a manner that will not cause turbidity increases in the receiving water, as measured in surface waters 300 feet down-current from the project, to exceed the Basin Plan objectives beyond an averaging period approved by the RWQCB and Department of Fish and Wildlife.
- If turbid conditions generated during dredging exceed the agreed-upon implementation requirements for compliance with the Basin Plan objectives, silt curtains will be utilized to control turbidity.
- Conduct in-river construction activities during low-flow periods to the extent practicable.

To the extent feasible, action alternative design would minimize the need to acquire or traverse areas where the presence of hazardous materials is suspected or has been verified. In addition, under Mitigation Measure HAZ-1a (described below), remediation and/or containment prior to discharge or disposal of contaminated soil and groundwater, as identified in preconstruction surveys, would be performed prior to construction of the proposed water conveyance facilities at known contaminated sites or in areas where contamination is suspected.

Constituents in Reusable Tunnel Material

RTM would consist of materials excavated from the tunnel bore, which would be advanced at a depth of approximately 100 feet below ground surface (bgs) and 160 feet bgs under Delta water channels. As described in Section 24.2.1.3, biodegradable soil conditioners or additives would be added during tunneling activities to facilitate the process, and RTM would be transported from the tunnel through the launching shaft to the surface and then by conveyor belt to RTM work areas. At the RTM areas, decant liquids from the RTM would be leached, collected and evaporated. RTM areas would be located just north of Scribner Road, east of the Sacramento River, on northern Brannan-Andrus Island, on southeastern Tyler Island, on eastern Bacon Island, and on northwestern Victoria Island. For a map of proposed RTM areas, see Figure M3-1 in the Mapbook Volume.

As described in Chapter 9, *Geology and Seismicity*, the geologic materials encountered during tunneling are expected to comprise alluvial sediments consisting of a mixture of clay, silt, sand, gravel and minor amounts of organic matter, all deposited prior to the arrival of settlers to California and subsequent mining, agricultural and urban land uses that have produced potential contaminants of concern, as discussed above. Approximately 25 million cubic yards of RTM are expected to be generated during construction of the Alternative 1A water conveyance facilities.

It is anticipated that all tunnel boring additives would be non-toxic and biodegradable. Regardless, before the RTM could be re-used or returned to the environment, it would be managed and at a minimum go through a drying/water-solids separation process and a possible physical or chemical treatment. Depending on the composition of the RTM and type of conditioning agents used, there would be many options for management of the RTM prior to reuse. Management could be done in several ways, including chemical flocculation, settlement/sedimentation, handling at a treatment plant, chemical conditioning or controlled storage. The method of controlled storage (described in Appendix 3C, *Details of Water Conveyance Facilities Components*), similar to landfill storage, would be the method with the broadest impacts because a designated area large enough to store the RTM may be required permanently. If controlled storage is necessary, the RTM would be deposited within designated RTM storage areas. To ensure that the RTM is contained within the designated area, a retaining dike would be built around the perimeter of the RTM area. RTM ponds would aid in RTM management and facilitate the dewatering. Several of the ponds would be designated as leachate ponds. The leachate would be pumped from the drainage system to the leachate ponds for possible additional treatment. To ensure that underlying groundwater is not contaminated, the invert of the RTM pond would be a minimum of 5 feet above the seasonal high groundwater table, and an impervious liner would be placed on the invert of the RTM pond and along the interior slopes of the berms to prevent any contact between the RTM and the groundwater.

Prior to reuse, the RTM would undergo chemical characterization. RTM would be tested in accordance with the methods outlined in EPA publication SW-846, as required by state and federal regulations prior to reuse (e.g., RTM in levee reinforcement) or disposal. Similarly, RTM decant liquid would also require testing prior to discharge to meet NPDES or Construction General Permit (Order 2010-0014-DWQ) requirements. Should constituents in RTM or associated decant liquid exceed discharge limits, these tunneling byproducts would be treated to comply with permit requirements. At a minimum, a final clean soil cover would be placed over the dewatered RTM in order to isolate any contaminates in the RTM and then seeded. Decant liquids from RTM may require additional chemical or physical treatment, such as flocculent addition to precipitate suspended sediment, prior to discharging to surface water.

As part of a Material Reuse Plan (MRP), prior to construction, draining, and chemical characterization of RTM, the BDCP proponents would identify sites for reusing this material to the greatest extent feasible, in connection with BDCP construction activities, habitat restoration activities, as well as for potential beneficial uses associated with flood protection and management of groundwater levels within the Plan Area. The BDCP proponent will undertake a thorough investigation to identify sites for the appropriate reuse of RTM, and will consult relevant parties, such as landowners, reclamation districts, flood protection agencies, state agencies with jurisdiction in the Delta, and counties, in developing site-specific material reuse plans, as described in Appendix 3B, *Environmental Commitments*. Following removal of RTM from the temporary RTM areas, stockpiled topsoil would be reapplied, and disturbed areas would be returned, to the extent feasible, to preconstruction conditions. In some instances it may be infeasible to transport and reuse RTM due to factors such as distance and cost, and/or any environmental effects associated with transport (e.g., unacceptable levels of diesel emissions). In such instances, RTM sites would be evaluated for the potential to reapply topsoil over the RTM and to continue or recommence agricultural activities. If, in consultation with landowners and any other interested parties, BDCP proponents determine that continued use of the land for agricultural or habitat purposes would be infeasible, the potential for other productive uses of the land would be examined, as described in Appendix 3B.

Electrical Transmission Lines

There are 9 overhead power/electrical transmission lines along the proposed Alternative 1A water conveyance facilities alignment (Table 24-3 and Figure 24-6). Disturbance of this infrastructure during construction activities that employ high-profile equipment, such as cranes, could result in safety hazards for construction workers in the immediate vicinity of an energized line. The most significant risk of injury from any power line is the danger of electrical contact between an object on the ground and an energized conductor. Generally, there is less risk of contact with higher voltage lines as opposed to low-voltage lines because of the height of the conductors. When work is performed near transmission lines, electrical contact can occur even if direct physical contact is not made, because electricity can arc across an air gap. DWR would be required to comply with Title 8 CCR, Section 2300 ("Low Voltage Electrical Safety Orders") and Section 2700 ("High Voltage Electrical Safety Orders") so that worker and public safety is ensured during work on or in immediate proximity to low- and high-voltage transmission lines. Other hazards associated with electrical transmission lines include potential health risks exposure to EMFs. These potential effects are described and assessed in Chapter 25, *Public Health*.

Infrastructure Containing Hazardous Materials

Infrastructure in the study area containing hazardous materials (e.g., natural gas pipelines) could pose hazards to the environment and the public if disturbed by construction activities. As described in Section 24.1.2, pipelines carrying fluids with hazardous characteristics (e.g., petroleum products) cross the Alternative 1A conveyance alignment and construction footprint (Figure 24-3). The number of regional pipeline crossings within the construction disturbance footprint of the all conveyance alternatives is provided in Table 24-3. Natural gas pipelines cross the conveyance alignment between Intakes 1 and 2, near a main tunnel construction shaft on Tyler Island, and near a main tunnel construction shaft on Bacon Island. Other product pipelines cross the alignment on the northern part of Woodward Island and along the southwestern side of the proposed Byron Tract Forebay and nearby spoil area. Further, hazardous materials storage vessels, such as tanks or other bulk containers used for processing, storage and distribution of fuels, pesticides or other hazardous materials may be present in the Alternative 1A water conveyance facilities construction footprint.

Active and inactive oil wells are present throughout the Delta and their locations are shown in Figure 24-5. Several active wells are proximate to the conveyance alignment where it crosses Brannan-Andrus and Tyler Islands.

Table 24-3. Number and Type of Pipelines and Electrical Transmission Lines Crossing All Alignments

Utility Operator and Type	Pipeline/ Tunnel Option (Alt. 1A, 2A, 3, 5, 6A, 7, and 8)	Modified Pipeline Tunnel Option (Alt. 4)	East Option (Alt. 1B, 2B, and 6B)	West Option (Alt. 1C, 2C, and 6C)	Separate Corridor Option (Alt. 9)
Electrical Transmission Lines					
Western Area Power Administration 69 kV	1	1	1	1	0
Western Area Power Administration 230 kV	2	2	2	1	2
Pacific Gas & Electric 115 kV	2	2	2	2	2
Pacific Gas & Electric 500 kV	3	3	3	4	0
Transmission Agency of Northern California/ Western Area Power Administration for the California-Oregon Transmission Project 500 kV	1	1	1	1	1
Pipelines					
Pacific Gas & Electric (size unspecified) Natural Gas	5	6	3	5	0
Chevron Texaco (7” diameter) Petroleum Product	1	1	1	0	0
Chevron Texaco (9” diameter) Petroleum Product	2	1	2	0	0
Kinder Morgan Pacific Region (10”) Petroleum Product	2[a]	2[a]	2[a]	0	2[a]

kV: kilovolts

[a] These Kinder Morgan product lines run parallel to one another

In addition, certain residential, agricultural, recreational (e.g., pools and docks) and other types of structures (e.g., power/utility structures, bridges, and other types of infrastructure) within the Alternative 1A water conveyance facilities footprint would need to be removed. Approximately 204 permanent structures would be removed or relocated within the water conveyance facility footprint under this alternative. This includes approximately 59 residential buildings; 15 recreational structures; 120 storage and agricultural support structures; and 10 other types of structures. One fire station in the community of Hood would also be affected. Most of these existing structures fall within the physical footprints of the intake facilities and their associated conveyance pipelines. These structures may contain hazardous materials in the form of building materials containing asbestos or lead-based paint, stored liquid paints and solvents, and household or industrial-strength maintenance chemicals and cleaners. Asbestos-containing material is regulated both as a hazardous air pollutant under the Clean Air Act (Chapter 22, *Air Quality and Greenhouse Gases*) and as a potential worker safety hazard by Cal-OSHA (see Section 24.2.2.13). Were these types of hazardous materials to be encountered during structure demolition, the potential for their release and the consequent adverse effects on the public, construction workers, and the environment would exist. To prevent adverse effects, DWR would implement Mitigation Measure HAZ-1b, which would

require that DWR coordinate with existing property owners to identify existing potentially hazardous infrastructure and infrastructure containing potentially hazardous materials, and that DWR perform pre-demolition surveys in order to identify and characterize hazardous materials to ensure the safe and appropriate handling and disposal of these materials.

There are five natural gas pipelines, five petroleum product pipelines, 19 known inactive and six active oil or gas wells within the construction footprint of the proposed Alternative 1A water conveyance alignment (Table 24-3, and Figures 24-3 and 24-5). In addition to the regional pipelines in the study area, there are networks of minor oil and gas gathering pipelines, which connect individual oil or gas wells to small storage and preliminary processing facilities operated by the different oil and gas companies working in the study area. Disturbance of this infrastructure during construction of the water conveyance facilities could result in hazards to the environment as well as physical and chemical hazards to the construction workers or the nearby public due to fires, explosions, and release of natural gas or petroleum products. The potential for disturbing oil and gas fields during excavation or tunneling activities is minimal because these fields are typically located at depths greater than 3,000 feet (U.S. Energy Information Administration 2012). Effects would be more likely to occur if utilities were not carefully surveyed prior to construction, including contact with local utility service providers. California Government Code Sections 4216–4216.9 require that anyone planning to excavate contact the appropriate regional notification center at least two working days (but not more than 14 calendar days) before beginning to excavate. Implementation of pre-construction surveys, and then utility avoidance or relocation if necessary, would minimize any potential disruption and hazardous effects due to disruption. Mitigation Measures UT-6a: Verify locations of utility infrastructure, and UT-6c: Relocate utility infrastructure in a way that avoids or minimizes any effect on worker and public health and safety (described in Chapter 20, *Public Services and Utilities*) address these effects.

Routine Transport of Hazardous Materials via Trucks, Trains, and Ships

Generally, the transportation of hazardous materials via trucks, trains and ships poses potential risks associated with the accidental release of these materials to the environment. Alternative 1A would require a heavy volume of materials to be hauled to the construction work areas, increasing the amount of trucks using the transportation system in the study area. Rerouting vehicular traffic carrying hazardous materials during construction of the water conveyance facilities could increase the risk of accidental release due to inferior road quality or lack of driver familiarity with the modified routes. This includes the risk of release of hazardous products or wastes being transported routinely or specifically for construction of the water conveyance facilities, and the corresponding risk of release of fuels (gasoline and diesel) from vehicular accidents. Three designated hazardous materials transportation routes cross the Alternative 1A alignment—State Highways 4, 12, and Byron Highway (Figure 24-2 and Table 24-4). It is not anticipated that traffic on any of these highways will need to be rerouted. Routes anticipated to be affected during construction of the water conveyance facilities are described in Chapter 19, *Transportation*. As described in Chapter 19, *Transportation*, under Mitigation Measure TRANS-1a, a site-specific construction traffic management plan, taking into account land (including rail) and marine hazardous materials transportation, would be prepared and implemented prior to initiation of water conveyance facilities construction. Mitigation Measure TRANS-1a includes stipulations to avoid or reduce potential circulation effects, such as such as providing signage, barricades, and flag people around construction work zones; notifying the public, including schools and emergency service providers of construction activities that could affect transportation; providing alternate access routes, if

necessary, to maintain continual circulation in and around construction zones; and requiring direct haulers to pull over in the event of an emergency.

Table 24-4. Number and Type of Designated Hazardous Materials Routes and Railroads Crossing All Water Conveyance Facilities Alignments

Route or Rail	Pipeline/Tunnel Option (Alt. 1A, 2A, 3, 5, 6A, 7, and 8)	Modified Pipeline Tunnel Option (Alt. 4)	East Option (Alt. 1B, 2B, and 6B)	West Option (Alt. 1C, 2C, and 6C)	Separate Corridor Option (Alt. 9)
Designated Hazardous Materials Routes					
State Highway 4	1	1	1	1	1
State Highway 12	1	1	1	1	0
Byron Highway	1	1	0	1	0
Railroads					
Union Pacific Railroad	2	2	2	2	0
Burlington Northern-Santa Fe Railroad	1	1	1	1	1
Abandoned Railroad	0	0	0	1	0

As described in Chapter 19, *Transportation*, shipping routes to ports in West Sacramento and Stockton are unlikely to be affected by barge traffic transporting equipment and materials for water conveyance facilities construction. However, barges supporting water conveyance facilities construction may also transport hazardous materials such as fuels and lubricants or other chemicals. The potential exists for accidental release of hazardous materials from BDCP-related barges. To avoid effects on the environment related to this issue, BMPs implemented as part of a Barge Operations Plan (for detail see Appendix 3B, *Environmental Commitments*), including the following, would avoid and/or minimize this potential adverse effect.

- All tugboats operating at the intake construction sites and the barge landings will keep an oil spill containment kit and spill prevention and response plan on-board.
- In the event of a fuel spill, report immediately to the California Department of Fish and Wildlife Office of Spills Prevention and Response: 800-852-7550 or 800-OILS-911 (800-645-7911).
- When transporting loose materials (e.g., sand, aggregate), barges will use deck walls or other features to prevent loose materials from blowing or washing off of the deck.

Finally, the proposed Alternative 1A conveyance would cross under the existing BNSF/Amtrak San Joaquin line between Bacon Island and Woodward Island. Maintaining freight and passenger service on the BNSF line is included in the project design, and the effect of this crossing would be minimal to nonexistent because the proposed conveyance would traverse the railroad in a deep bore tunnel. The UPRR Tracy Subdivision (branch line) runs parallel to Byron Highway, between the highway and the proposed new forebay adjacent to the existing Clifton Court Forebay. The construction of the new forebay is unlikely to disrupt rail service because much of this line has not been in service recently. The UPRR may return it to freight service in the future. Any potential effects on rail traffic during construction would be reduced with implementation of Mitigation Measure TRANS-1a, which would include stipulations to coordinate with rail providers to develop alternative interim

transportation modes (e.g., trucks or buses) that could be used to provide freight and/or passenger service during any longer term railroad closures and daily construction time windows during which construction would be restricted or rail operations would need to be suspended for any activity within railroad rights of way. This would minimize the potential risk of release of hazardous materials being transported via these railways (see Chapter 19, *Transportation*, for a description).

In summary, during construction of the water conveyance facilities, the potential would exist for direct effects on construction personnel, the public and/or the environment associated with a variety of potentially hazardous conditions because of the intensity of construction activities at the north Delta intakes, forebays, conveyance pipelines, and tunnels, and the hazardous materials that would be used in these areas. Many of these activities would occur in close proximity to the towns of Hood and Courtland, and would involve multiple years of use of hazardous construction materials. Additionally, large-scale construction activities involving the use of hazardous materials would be located in and near water bodies. Potential hazards include the routine transport, use or disposal of hazardous materials; natural gas accumulation in water conveyance tunnels; the inadvertent release of existing contaminants in soil and groundwater, or hazardous materials in existing infrastructure to be removed; disturbance of electrical transmission lines; and hazardous constituents present in RTM. Additionally, there is the potential for the construction of the water conveyance facilities to indirectly result in the release of hazardous materials through the disruption of existing road, rail, or river hazardous materials transport routes because construction would occur in the vicinity of three hazardous material transport routes, three railroad corridors, and waterways with barge traffic and would require construction traffic that could disrupt these routes. These potential effects are considered adverse because they would potentially result in direct exposure of the public (including construction personnel), and surface water and groundwater to physical and/or chemical hazards as discussed. Mitigation Measures HAZ-1a and HAZ-1b, UT-6a and UT-6c (described in Chapter 20, *Public Services and Utilities)* and TRANS-1a (described in Chapter 19, *Transportation*), combined with the previously described environmental commitments are available to address these effects. Therefore, there would be no adverse effects.

***CEQA Conclusion*:** During construction of the water conveyance facilities, the potential would exist for direct impacts on construction personnel, the public, and/or the environment associated with a variety of hazardous physical or chemical conditions. Such conditions may arise as a result of the intensity and duration of construction activities at the north Delta intakes, forebays, conveyance pipelines, and tunnels and the hazardous materials that would be needed in these areas during construction. Potential hazards include the routine use of hazardous materials (as defined by Title 22 of the California Code of Regulations, Division 4.5); natural gas accumulation in water conveyance tunnels; the inadvertent release of existing contaminants in soil and groundwater, or hazardous materials in existing infrastructure to be removed; disturbance of electrical transmission lines; and hazardous constituents present in RTM. Many of these physical and chemical hazardous conditions would occur in close proximity to the towns of Hood and Courtland during construction of the north Delta intakes and the intermediate forebay.

Additionally, the potential would exist for the construction of the water conveyance facilities to indirectly result in the release of hazardous materials through the disruption of existing road, rail, or river hazardous materials transport routes because construction would occur in the vicinity of three hazardous material transport routes, three railroad corridors, and waterways with barge traffic and would require construction traffic that could disrupt these routes. For these reasons, this is considered a significant impact. However, with the implementation of the previously described environmental commitments (e.g., SWPPPs, HMMPs, SPCCPs, SAPs, and a Barge Operations Plan)

and Mitigation Measures HAZ-1a and HAZ-1b, UT-6a and UT-6c (described in Chapter 20, *Public Services and Utilities)*, and TRANS-1a (described in Chapter 19, *Transportation*), construction of the water conveyance facilities would not create a substantial hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or the upset/accidental release of these materials.

The severity of this impact would be reduced with the implementation of these environmental commitments and mitigation measures by identifying and describing potential sources of hazardous materials so that releases can be avoided and materials can be properly handled; detailing practices to monitor pollutants and control erosion so that appropriate measures are taken; implementing onsite features to minimize the potential for hazardous materials to be released to the environment or surface waters; minimizing risk associated with the relocation of utility infrastructure; and coordinating the transport of hazardous materials to reduce the risk of spills. Accordingly, these impacts would be less than significant.

Mitigation Measure HAZ-1a: Perform Preconstruction Surveys, Including Soil and Groundwater Testing, at Known or Suspected Contaminated Areas within the Construction Footprint, and Remediate and/or Contain Contamination

BDCP proponents will identify potential areas of hazardous materials and remediate and/or contain contamination in order to reduce the likelihood of hazardous materials being released into the environment. The BDCP proponents will perform preconstruction hazardous waste investigations at properties to be acquired for construction associated with the BDCP. Areas to be excavated as part of construction (e.g., for water conveyance facilities, shaft locations, concrete batch plants, intake locations, RTM areas, staging areas, forebays, borrow and spoil sites, barge unloading, restoration activities, and other appurtenant facilities) where historical contamination has been identified (e.g., SOCs) or where contamination is suspected (e.g., as evidenced by soil discoloration, odors, differences in soil properties, abandoned USTs) will undergo soil and/or groundwater testing at a certified laboratory. Where concentrations of hazardous constituents, such as fuel, solvents or pesticides in soil or groundwater exceed applicable federal or state thresholds contaminated areas will be avoided or remediated and contained in compliance with applicable state and federal laws and regulations. Groundwater removed with the dewatering system would be treated, as necessary, and discharged to surface waters under an NPDES permit (see Chapter 8, *Water Quality*).

Implementation of this mitigation measure will result in the avoidance, successful remediation or containment of all known or suspected contaminated areas, as applicable, within the construction footprint, which would prevent the release of hazardous materials from these areas into the environment.

Mitigation Measure HAZ-1b: Perform Pre-Demolition Surveys for Structures to Be Demolished within the Construction Footprint, Characterize Hazardous Materials and Dispose of Them in Accordance with Applicable Regulations

BDCP proponents will perform surveys and characterize and dispose of hazardous materials in order to reduce the likelihood that hazardous materials are released into the environment. Where demolition of existing structures is necessary, measures will be implemented to ensure hazards are avoided or minimized and that the release of hazardous materials, such as residual

fuel in underground fuel storage tanks, or lead-based paint or asbestos-containing materials in buildings, is avoided. These measures will include the following practices.

- Perform pre-demolition surveys to identify all potentially hazardous materials, including asbestos-containing material and lead-based paint.
- Coordinate with owners of property to be acquired by BDCP proponents to help identify potentially hazardous infrastructure and/or infrastructure containing potentially hazardous materials.
- Characterize and separate hazardous materials from structures before demolition and ensure that such materials are disposed of at an approved disposal site according to applicable regulations.
- Remove underground fuel storage tanks and contents to a licensed disposal site where the tanks will be scraped and the contents disposed of in accordance with applicable regulations.
- Disposal of materials containing PCBs will comply with all applicable regulations, codes, and ordinances. Disposal of large quantities of PCB waste will occur at incinerators approved for burning of PCB-containing waste.
- Implement proper handling and disposal procedures for potentially hazardous materials, such as solvents and household or industrial-strength maintenance chemicals and cleaners in buildings to be demolished.
- As applicable, a Cal-OSHA-certified asbestos and lead-based paint contractor will prepare a site-specific asbestos and/or lead hazard control plan with recommendations for the containment of asbestos and/or lead-based paint materials during demolition activities, for appropriate disposal methods and locations, and for protective clothing and gear for abatement personnel. Site-specific asbestos abatement work would meet the requirements of both the federal Clean Air Act and Cal-OSHA (CCR Title 8, Subchapter 4, Article 4, Section 1529). If asbestos-containing materials are found, contractors licensed to conduct asbestos abatement work will be retained and will direct the abatement. In addition, the applicable Air Quality Management District(s) will be notified 10 days prior to initiation of demolition activities of asbestos-containing materials.
- Containers suspected of, or confirmed as, containing lead-based paint will be separated from other building materials during the demolition process. Separated paint will be classified as a hazardous waste if the lead content exceeds 1,000 parts per million and will be disposed of in accordance with applicable regulations.
- Sewer lines will be plugged with concrete to prevent soil and/or groundwater contamination, and the end of the lines will be flagged above ground for future location and identification.
- Gas lines will be plugged or capped and the end of the lines will be flagged above ground for future location and identification.
- The use of explosives for demolition will not be allowed.
- Hazardous waste, including contaminated soil, generated at demolition sites will be handled, hauled, and disposed of at an appropriately licensed disposal facility under appropriate manifest by a licensed hazardous waste hauler.

- Implementation of this mitigation measure will ensure that hazardous materials present in or associated with structures being demolished will not be released into the environment.

Mitigation Measure UT-6a: Verify Locations of Utility Infrastructure

Please see Mitigation Measure UT-6a under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure UT-6c: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Worker and Public Health and Safety

Please see Mitigation Measure UT-6c under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management Plan

Please see Mitigation Measure TRANS-1a under Impact TRANS-1 in the discussion of Alternative 1A in Chapter 19, *Transportation*.

Impact HAZ-2: Expose Sensitive Receptors Located within 0.25 Mile of a Construction Site to Hazardous Materials, Substances, or Waste during Construction of the Water Conveyance Facilities

NEPA Effects: An adverse effect may occur if a construction work site is located within 0.25 mile of an existing or proposed school or other sensitive receptor (for this analysis, a hospital or park) and releases hazardous materials that pose a health hazard. However, there are no schools, parks or hospitals located within 0.25 mile of the Alternative 1A water conveyance alignment (Figure 24-8). Therefore, there would be no effect due to exposure of sensitive receptors to hazardous materials, substances or waste during construction of the water conveyance facilities. Potential air quality effects on sensitive receptors are discussed in Chapter 22, *Air Quality and Greenhouse Gases.*

CEQA Conclusion: There are no schools, parks or hospitals located within 0.25 mile of the Alternative 1A water conveyance alignment, therefore, there would be no impact due to exposure of sensitive receptors to hazardous materials, substances or waste during construction of the water conveyance facilities. No mitigation is required. Potential air quality effects on sensitive receptors are discussed in Chapter 22, *Air Quality and Greenhouse Gases.*

Impact HAZ-3: Potential to Conflict with a Known Hazardous Materials Site and, as a Result, Create a Significant Hazard to the Public or the Environment

NEPA Effects: As described in Section 24.1, the storage and use of bulk quantities of hazardous materials, such as pesticides, fuels and solvents, is common throughout the study area. The locations of known or suspected SOCs that may have contaminated soils and/or groundwater were identified in the study area during the ISA and are presented in Figure 24-4. SOCs within 0.5 mile of the construction footprint, as well as those within the construction footprint, for this alternative are identified in Table 24-5. The number of SOCs may change during right-of-way evaluation, land acquisition and preconstruction site-clearance investigations or during construction. Additional SOCs may be identified during these activities, and currently identified SOCs may be determined innocuous after site-specific field investigation and testing.

1 **Table 24-5. Sites of Concern within 0.5 Mile of Conveyance Alignments**

Site Name	Associated Databases[a]	Summary	Site Within Conveyance Option Construction Footprint
Pipeline/Tunnel Alignment (Alternatives 1A, 2A, 3, 5, 6A, 7, and 8)			
Circle K Ranch	LUST, UST, HIST LUST, CORTESE	The site had petroleum and constituents in soil and groundwater above cleanup standards. Sacramento County made a "No Further Action" determination for this site on September 15, 2008.	No
D-Gas	LUST/UST/HIST LUST, CORTESE	Industrial maintenance facility and pumping station; No regulatory listing	No
Woodward Drilling		Drilling company yard with vehicle maintenance; Open LUST case;	No
Hamatani Farms, Inc.	LUST, STATE UST, CORTESE	Two 1,500 gallon USTs were removed from this site in 1992. The most recent groundwater monitoring report from third quarter 2008 indicates that groundwater in this vicinity contains petroleum products in excess of cleanup standards.	No
Modified Pipeline/Tunnel Alignment (Alternative 4)			
Excelsior Middle School	ENVIROSTOR	Previously used for agricultural purposes, potential arsenic contamination in soil.	No
Bay Standard	ENVIROSTOR, CERCLIS/CERCLIS NFRAP, RCRA	Metal and metal plating manufacturing plant.	No
Circle K Ranch	LUST, UST, HIST LUST, CORTESE	The site had petroleum and constituents in soil and groundwater above cleanup standards. Sacramento County made a "No Further Action" determination for this site on September 15, 2008.	No
East Alignment (Alternatives 1B, 2B, and 6B)			
Circle K Ranch	LUST, STATE UST, CORTESE	The site had petroleum and constituents in soil and groundwater above cleanup standards. Sacramento County made a "No Further Action" determination for this site on September 15, 2008.	No
Paradise Point Engine and Boat Repair	ENVIROSTOR, VCP, CA WDS, CORTESE, SLIC	Spent sand blast grit containing copper and zinc was disposed of at this site. The grit was removed in 2004 and remaining concentrations in soil were below the soil cleanup standards.	No
Kinder Morgan Energy	SLIC	Pipeline access station; SLIC; Refined petroleum products pipeline	Yes
D&D Flying Service	SLIC	A 1990 inspection report indicates that this site had no rinsewater containment for its agricultural spraying operation. No files were found to indicate that any investigation or cleanup was undertaken.	No

Site Name	Associated Databases[a]	Summary	Site Within Conveyance Option Construction Footprint
Hamatani Farms, Inc.	LUST, STATE UST, CORTESE	Two 1,500 gallon USTs were removed from this site in 1992. The most recent groundwater monitoring report from third quarter 2008 indicates that groundwater in this vicinity contains petroleum products in excess of cleanup standards.	No
Sarale Farms	LUST, STATE UST, CORTESE	A 10,000 gallon UST was removed from this site in 1992. Soil and groundwater contain petroleum products in excess of cleanup standards. The San Joaquin County Environmental Health Department issued a letter in December 2008 requiring continued monitoring of groundwater and additional assessment of groundwater for petroleum.	Yes
Dump Site A	LUST, STATE UST, CORTESE	Current service station; Sacramento County Contaminated Site case	No
Woodward Drilling		Drilling company yard with vehicle maintenance; Open LUST case;	No
Stockton Naval Communications	RCRA CORRACTS/TSD, CERCLIS/NFRAP, RCRA INFO, PADS, RESPONSE, HIST-CAL, CORTESE	United States Navy communications facility	No
West Alignment (Alternatives 1C, 2C, and 6C)			
JR Simplot	CERCLIS/NFRAP, ENVIROSTOR, STATE UST, CA WDS, CORTESE, SLIC	This is a former fertilizer plant in Courtland. Prior to ownership by Simplot, it was owned by Occidental Chemical, and based on file review appears to have stored or formulated pesticides on-site. No files from after 1996 were available. At that time, low levels of pesticides were present in soils and groundwater, and groundwater contained levels of nitrates in excess of cleanup standards. The site is undergoing phytoremediation; no monitoring data were available to review the status of cleanup in 2009.	No
Norm's Auto Garage		Closed/vacant auto repair facility; Closed LUST case	No
Woodward Drilling		Drilling company yard with vehicle maintenance; Open LUST case;	No
Agricultural Chemical Operation A		Agricultural chemical storage/batch plant; No regulatory listing; ASTs located inside and outside of secondary containment. Drums stored onsite. Staining inside secondary containment.	No
Marine Emporium	CA WDS	Marine repair shop; Contra Costa Contaminated Site List	No

Site Name	Associated Databases[a]	Summary	Site Within Conveyance Option Construction Footprint
Mill Site A		Agricultural mill; No regulatory listing; Large agricultural mill with outbuildings, considerable debris. Historical aerial photographs indicate presence of facility since 1972. Most of the debris has accumulated since the 1999 aerial photograph	Yes
Clarksburg Diesel Fuel Spill	SLIC	Site is located at a vineyard, and was the result of a 500-gallon spill of diesel fuel onto soil in December 2006. Fifteen tons of soil was removed in 20-by-50-foot area. No confirmation sampling data were found in the file.	No
Reclamation District 999 Yard		Industrial maintenance facility and pumping station	No
Bethel Island Golf Course	LUST/UST/HIST LUST	Petroleum releases have occurred from USTs at this site. Soil and groundwater contain petroleum products in excess of cleanup standards. Remediation is ongoing.	No
Through Delta/Separate Corridors (Alternative 9)			
Unocal Bulk Plant	RCRA INFO, SLIC	The site operated as a bulk storage and distribution facility for petroleum products from 1922 to 1980, with 11 ASTs and underground pipelines. Products were shipped by barge on the Sacramento River. The latest monitoring report from third quarter 2008 indicates that groundwater contains petroleum products above cleanup standards.	Yes
Former BC Stocking Bulk Plant	RCRA INFO, SLIC	The site operated as a bulk storage and distribution facility for petroleum products for an unknown period of time, with six ASTs and underground pipelines. A sampling investigation from 2008 indicates that groundwater contains petroleum products in excess of cleanup standards.	No
Crop Production Services		Agricultural chemical supply company; No regulatory listing; Historical aerial photographs show site presence since at least the 1950s	No
D-Gas	LUST/UST/HIST LUST, CORTESE	Industrial maintenance facility and pumping station; No regulatory listing	No

[a] A summary of the federal and state database searches performed in the Phase 1 ISA (May 2009) is provided in Appendix 24A, *Bay Delta Conservation Plan Draft Phase 1 Initial Site Assessment*.

California Government Code 65962.5 directs DTSC to compile a list, known as the "Cortese List," of hazardous materials sites. These sites consist of leaking underground storage tanks, solid waste facilities, landfills and sites with potential or confirmed hazardous substance releases. Although this list is no longer updated by the state, it nonetheless provides valuable information to developers to

prevent the re-release of hazardous materials resulting from excavation or disturbance of hazardous materials by preventing unanticipated disturbance of these sites. "Cortese List" sites make up a subset of the mapped SOCs.

There are no "Cortese List" sites or known SOCs within the construction footprint of Alternative 1A (Table 24-5 and Figure 24-4), and therefore there would be no conflict pertaining to a known hazardous materials site during construction of the water conveyance facilities, and thus, no related hazard to the public or the environment. For those hazardous materials sites identified within the 0.5-mile radius, but which are not within the construction footprint, there would be no potential for the construction of the water conveyance facilities to disturb those sites such that there would be a re-release of hazardous materials that would create a hazard for the public or environment. Therefore, there would be no effect. The potential for encountering unknown hazardous materials sites during the course of construction is discussed under Impact HAZ-1.

CEQA Conclusion: Because there are no known SOCs within the construction footprint of the water conveyance facility under this alternative, there would be no conflict with known hazardous materials sites during construction of the water conveyance facilities, and therefore, no related hazard to the public or the environment. Accordingly, there would be no impact. No mitigation is required. The potential for encountering unknown hazardous materials sites during the course of construction is discussed under Impact HAZ-1.

Impact HAZ-4: Result in a Safety Hazard Associated with an Airport or Private Airstrip within 2 Miles of the Water Conveyance Facilities Footprint for People Residing or Working in the Study Area during Construction of the Water Conveyance Facilities

NEPA Effects: Development around an airport, particularly in the approach and departure paths, can create obstructions in the airspace traversed by an approaching or departing aircraft. Additionally, certain land uses have the potential to create hazards to aircraft such as a distracting glare, smoke, steam, or invisible heat plumes. Safety impacts from aircraft accidents near airports are typically avoided by specifying the types of land uses allowed, and thereby limiting the number of people who would be exposed to the risk of an accident, and avoiding land uses that could create hazards to air traffic. Airspace protection primarily involves limitations on the height of objects on the ground near airports.

High-profile construction equipment, such as tall cranes for installation of pipelines, placement of concrete fill in intake piles, and removal of cofferdam sheet piles, for example, and pile drivers, such as would be used during the construction of the intakes, have the potential to result in safety hazards to aircraft during takeoff and landing if the equipment is operated too close to runways. It is not yet known what the maximum height of the high-profile construction equipment that would be used would be. Tower cranes, for example, may be required, and a typical tower crane can have a total height greater than 200 feet—a height that could be considered an obstruction or hazard to navigable air space if located near an airport. Similarly, tall structures, such as the surge towers at the pumping plants for Intakes 1 and 2, could also pose a risk to air safety. As shown in Figure 24-9 and Table 24-6, three private airports (Borges-Clarksburg Airport, Walnut Grove Airport, and Spezia Airport) and one public airport (Byron Airport) are located within 2 miles of the water conveyance facilities for Alternative 1A. The Borges-Clarksburg Airport, located 2 miles northeast of the town of Clarksburg, is within 0.5 miles of a proposed intake work area (Intake 1) and less than one mile from the intake. These are water conveyance feature construction areas where high-profile construction equipment may be used.

Table 24-6. Distance between Airports within the Study Area and the Water Conveyance Facilities Alignments (miles)

Airport	Pipeline/ Tunnel Alignment (Alt. 1A, 2A, 3, 5, 6A, 7 and 8)	Modified Pipeline/ Tunnel Alignment (Alt. 4)	East Alignment (Alt. 1B, 2B, and 6B)	West Alignment (Alt. 1C, 2C, and 6C)	Through Delta/ Separate Corridors (Alt. 9)
Delta Air Park (private)	5.8	4.8	11.2	0.2	6.5
Garibaldi Brothers Airport (private)	29.0	30.0	31.4	14.4	23.5
Maine Prairie Airport (private)	14.9	15.7	14.9	10.2	17.9
Borges-Clarksburg Airport (private)	0.4	1.6	0.4	0.3	11.4
Spezia Airport (private)	0.1	1.9	3.4	3.2	1.6
Byron Airport (public)	1.5	1.2	1.5	0.9	3.5
Lost Isle Seaplane Base (public)	4.0	3.0	0.6	8.0	3.5
Walnut Grove Airport (private)	0.3	2.3	3.9	2.8	2.0
Flying B Ranch Airport (private)	3.7	1.4	3.1	4.8	5.6
Funny Farm Airport (private)	5.4	2.5	9.6	0.5	4.1
Franklin Field Airport (public)	4.3	0.6	2.3	6.1	4.7

Walnut Grove and Spezia Airports, on Andrus Island and Tyler Island, respectively, are within 2 miles of the following proposed features or areas: a temporary 69 kV transmission line; a permanent 230 kV transmission line; a RTM area; the tunnel; a tunnel work area; and the main construction shaft for the tunnel. Byron Airport, less than 1.5 miles west of Clifton Court Forebay, is within 2 miles of a proposed 12 kV temporary transmission line; a proposed 230 kV permanent transmission line; Byron Tract Forebay; and a borrow and/or spoils area. With the exception of the proposed transmission lines, construction of these features or work in these areas would not require the use of high-profile construction equipment. Because construction of the proposed transmission lines would potentially require high-profile equipment (e.g., cranes), and because construction of the 230 kV transmission line would require the use of helicopters during the stringing phase, the safety of air traffic arriving or departing from either of these airports could be compromised during construction of the proposed transmission lines.

To help ensure protection of airspace, under 14 CFR Part 77, the FAA requires project proponents to inform them about proposed construction or alteration of objects within 20,000 feet of a public-use or military runway and having a height exceeding a 100:1 imaginary surface (1 foot upward per 100 feet horizontally) beginning at the nearest point of the runway for runways greater than 3,200 feet in length. For shorter public-use or military runways, the notification surface has a 50:1 slope and extends 10,000 feet from the runway. Exceptions to this notification requirement are made for "any object that would be shielded by existing structures of a permanent and substantial character or by natural terrain or topographic features of equal or greater height, and would be located in the congested area of a city, town, or settlement where it is evident beyond all reasonable doubt that the structure so shielded would not adversely affect safety in air navigation." Notice must be provided for temporary objects such as construction cranes and any object more than 200 feet in height above ground level or above the established airport elevation. Notification of the FAA enables them to

evaluate the effect of the proposed object on air navigation through an aeronautical study (Obstruction Evaluation/Airport Airspace Analysis [OE/AAA]). The OE/AAA will indicate whether the project would have a "substantial adverse effect" on air safety. If it is determined that the proposed structure or structures exceeds obstruction standards or will have an adverse effect on navigable airspace, the project proponent is given the opportunity to amend the project proposal to avoid the impact; adjustments to aviation requirements that would accommodate the project are investigated as well. The State Aeronautics Act (Public Utilities Code, Section 21001 et seq.) authorizes Caltrans and local governments to protect navigable airspace and prohibits the construction of any structure or permitting any natural growth of a height which would constitute a hazard to air navigation unless Caltrans first issues a permit (Public Utilities Code, Section 21659). The permit is not required if the FAA has determined that the structure or growth does not constitute a hazard to air navigation or would not create an unsafe condition for air navigation. Caltrans requires notification, in writing, for proposed construction of any state building or enclosure within 2 miles of any airport before an agency acquires title to the property for the building or enclosure or for an addition to an existing site (Public Utilities Code, Section 21655). Caltrans would respond with a written investigation report of the proposed site and provide recommendations, as necessary, to reduce potential hazards to air navigation. DWR would adhere to these recommendations, which would reduce the potential for adverse effects on air safety (e.g., recommendations for the marking and/or lighting of temporary or permanent structures exceeding an overall height of 200 feet above ground level), as would compliance with the recommendations of the OE/AAA. Therefore, this effect would not be adverse.

CEQA Conclusion: The use of helicopters for stringing the proposed 230 kV transmission lines and of high-profile construction equipment (200 feet or taller), such as cranes, for installation of pipelines, placement of concrete fill in intake piles, and removal of cofferdam sheet piles, for example, and potentially pile drivers, such as would be used during the construction of the intakes, have the potential to result in safety hazards to aircraft during takeoff and landing if the equipment is operated too close to runways. Three private airports (Borges-Clarksburg, Spezia, and Walnut Grove Airports) and one public airport (Byron Airport) are located within 2 miles of the construction footprint of Alternative 1A. DWR would coordinate with Caltrans' Division of Aeronautics prior to initiating construction and would comply with its recommendations based on its investigation(s), as well as complying with the recommendations of the OE/AAA (for Byron Airport). These recommendations, which could include limitations necessary to minimize potential problems, such as the use of temporary construction equipment, supplemental notice requirements, and marking and lighting high-profile structures would reduce the potential for impacts on air safety. Accordingly, this impact would be less than significant. No mitigation is required.

Impact HAZ-5: Expose People or Structures to a Substantial Risk of Property Loss, Personal Injury or Death Involving Wildland Fires, Including Where Wildlands Are adjacent to Urbanized Areas or Where Residences Are Intermixed with Wildlands, as a Result of Construction, and Operation and Maintenance of the Water Conveyance Facilities

NEPA Effects: As shown in Figure 24-10, no portion of Alternative 1A is located in or near an area designated as a High or Very High Fire Hazard Severity Zone. The northernmost and southernmost portions of Alternative 1A, where intake facilities and fueling stations, and the Byron Tract Forebay, respectively, would be located, are near Moderate Fire Hazard Severity Zones (Figure 24-10). Construction, operation, and maintenance of the water conveyance facilities would involve the use of equipment and ignitable materials, and would involve activities that could potentially start fires.

For example, as discussed in Chapter 3, *Description of Alternatives,* facility maintenance would consist of activities such as painting, cleaning, repairs, and other routine tasks. Some of these activities would involve the use of flammable chemicals, such as fuels and solvents, which could be inadvertently ignited by sparks from equipment/machinery if proper safety measures were not employed. Further, during construction, fires could be caused by a variety of factors, including vehicle exhaust, welding activities, parking on dry grass, and accidental ignition of fuel. However, as previously discussed, the study area mainly consists of agricultural lands with pockets of rural residential land uses that are not adjacent to wildlands, as well as residential areas that are intermixed with wildlands. The potential for construction or operation and maintenance activities to generate hazards associated with wildland fires would be minimal. Further, as described in Appendix 3B, *Environmental Commitments*, measures to prevent and control wildland fires would be implemented by DWR during construction, and operation and maintenance of the water conveyance facilities in full compliance with Cal-OSHA standards for fire safety and prevention. These measures would include, but not be limited to, the following.

- Construction sites will have an adequate onsite supply of water and all-weather access for firefighting equipment and emergency vehicles.
- A list of all major fire hazards, proper handling and storage procedures for hazardous materials, potential ignition sources and their control, and the type of fire protection equipment necessary to control each major hazard.
- No fires will be allowed at work sites. Smoking will be allowed only in areas designated for smoking, and these areas will be cleared of vegetation, or in enclosed vehicles. Cigarette butts are to be disposed of in car ashtrays or other approved disposal containers and dumped daily in a proper receptacle off the work site.
- The contractor will be responsible for maintaining appropriate fire suppression equipment at the work site including an all-wheel drive water truck or fire truck with a water tank of at least 3,000 gallon capacity. Fire extinguishers, shovels and other firefighting equipment will be available at work sites and on construction equipment. Each vehicle on the ROW will be equipped with a minimum 20 pound (or two 10 pound) fire extinguisher(s) and a minimum of 5 gallons of water in a fire fighting apparatus (e.g., bladder bag).
- At the work site, a sealed fire toolbox will be located at a point accessible in the event of fire. This fire toolbox will contain: one back-pack pump-type extinguisher filled with water, two axes, two McLeod fire tools, and enough shovels so that each employee at the work site can be equipped to fight fire.
- Gasoline-powered construction equipment with catalytic converters will be equipped with shielding or other acceptable fire prevention features. Internal combustion engines will be equipped with spark arrestors.
- Welding sites will include fire prevention provisions.
- The contractor will maintain contact with local firefighting agencies throughout the fire season for updates on fire conditions, and such fire conditions will be communicated to the contractor's employees daily.
- Vehicles will be restricted to the work site unless otherwise allowed for fire control procedures.
- Depending on the characteristics of the construction site, the dimensions and use of the rooms, the on-site equipment, the physical and chemical properties of the substances present and the

maximum potential number of workers present, an adequate number of appropriate basic fire-fighting devices and, where required, automatic fire extinguishing systems shall be provided at the site.

- Basic fire-fighting devices and automatic fire extinguishing systems shall be regularly maintained, checked and tested.
- Basic fire-fighting devices shall be positioned in a visible place which is free from obstruction.
- The location of fire-fighting equipment shall be indicated by fire safety signs. The signs shall be sufficiently resistant and placed at appropriate points.
- If substances which can cause combustion or substances the use of which may produce explosive dust or gas are used or preserved on a construction site, special protective measures (ventilation, prohibition on the use of open fire, etc.) shall be applied in order to prevent the risk of fire and explosion.
- Every person at work on a construction site shall, so far as is reasonably practicable, be instructed in the correct use of any fire-fighting equipment which it may be necessary for him to use.

These measures and potentially others will be guided by implementation of a FPCP in coordination with federal, state, and local agencies, as part of the project as an environmental commitment (Appendix 3B, *Environmental Commitments*). Because development and implementation of measures under the FPCP would help ensure that people or structures would not be subject to a substantial risk of loss of property, personal injury, or death involving wildland fires and because the proposed water conveyance facilities would not be located in a High or Very High Fire Hazard Severity Zone, this effect would not be adverse.

CEQA Conclusion: People or structures would not be subject to a substantial risk of loss, injury or death involving wildland fires during construction or operation and maintenance of the water conveyance facilities because the BDCP would comply with Cal-OSHA fire prevention and safety standards; DWR would implement standard fire safety and prevention measures, as part of a FPCP (Appendix 3B, *Environmental Commitments*); and because the water conveyance facilities would not be located in a High or Very High Fire Hazard Severity Zone. Therefore, this impact would be less than significant. No mitigation is required.

Impact HAZ-6: Create a Substantial Hazard to the Public or the Environment through the Release of Hazardous Materials or by Other Means during Operation and Maintenance of the Water Conveyance Facilities

NEPA Effects: During long-term operation and maintenance of the water conveyance facilities, the transport, storage, and use of chemicals or hazardous waste materials may be required. Hazardous waste generated at facility sites will be handled, hauled, and disposed of at an appropriately licensed disposal facility under appropriate manifest by a licensed hazardous waste hauler (see Appendix 3B, *Environmental Commitments)*. Maintenance requirements for several of the water conveyance facilities features (e.g., tunnels) have not yet been finalized. However, the operation and maintenance of certain alternative features, such as the intake pumping plants and the intermediate pumping plant, would require the use of hazardous materials, such as fuel, oils, grease, solvents, and paints. For example, planned maintenance at pumping facilities would include checking oil levels, replacing oil in the pumps and greasing pump bearings. Additionally, routine facility maintenance

would involve painting of pumping plants and appurtenant structures, cleaning, repairs, and other routine tasks that ensure the facilities are operated in accordance with design standards.

Facility equipment maintenance would be required for the intake pumping plants, sedimentation basins and solids lagoons, the intermediate forebay and pumping plant, and Byron Tract Forebay. Timing of maintenance activities would be variable and would be dictated by the schedule and day-to-day requirements of specific components being maintained. Maintenance activities at the intakes would include debris and sediment removal, biofouling and corrosion prevention, and repairs following physical impacts to the intake structures. Sediment and solids removal from the sedimentation basins and solids lagoons, respectively, is expected to be an ongoing process during operation of the water conveyance facilities. During operation of the water conveyance facilities, water would enter sedimentation basins at five intakes along the east bank of the Sacramento River in the north Delta. Settled sediment would then be pumped to solids lagoons where it would be dewatered and removed for disposal off site; sediment pore water would be pumped back into the sedimentation basins. The dewatered solids, like sediment dredged at the intakes, may contain pesticides from agricultural and urban areas, metals or organic compounds from urban stormwater runoff and mercury from historic mining upstream of the Delta. The wide variety of pesticides that has been applied, the numerous crops grown in the region, and the fact that predominant land use across the Delta supports agriculture indicate that persistent pesticides that have been widely applied (e.g., organochlorines) and are likely to be found in the soils and potentially sediment throughout the Delta. Because of their relatively low water solubility, persistent pesticides and compounds generally accumulate in the environment in sediment and soil, as well as in the fatty tissue of terrestrial and aquatic animals and humans. Human exposure to organochlorine pesticides is primarily through the diet. No comprehensive area-wide soil or sediment sampling program is known to have been conducted to evaluate pesticide residues from agricultural use. Thus, it is not known if persistent pesticide concentrations in dewatered solids from the solids lagoons, or in dredged sediment from around the intakes would exceed applicable federal or state standards. As previously described, although the concentration of mercury in sediment throughout the study area is not known, one study indicated that the mercury concentration in sediment (suspended) at Freeport, just upstream of the intake locations, was less than 10 ng/l, below the recommended criterion of 50 ng/l (Domagalski 2001).

Based on a worst-case scenario, considering the throughput of the intakes at a maximum flow of 3,000 cfs, an estimated 137,000 dry pounds of solids per day would be pumped to the solids lagoons. During periods of high sediment load in the Sacramento River, the daily mass of solids would be expected to increase to up to 253,000 dry pounds per day. The annual volume of solids is anticipated to be approximately 486,000 cubic feet (dry solids). An anticipated 18,000 cubic yards of dry sediment/solids would be produced annually as a result of maintenance of the solids lagoons. Potentially contaminated solids could pose a hazard to the environment if improperly disposed of. Implementation of Mitigation Measure HAZ-6 (described below) would help ensure that there are no adverse effects on soil, groundwater or surface water due to improperly disposed of lagoon solids. Dewatered solids may require special management to meet discharge/disposal requirements. To ensure that potentially contaminated sediment from maintenance dredging activities at the intakes would not adversely affect soil, groundwater or surface water, a SAP would be implemented prior to any dredging activities, as described under Impact HAZ-1 for this alternative. All sediment would be characterized chemically prior to reuse and/or disposal to ensure that reuse of this material would not result in a hazard to the public or the environment.

To the extent practicable, scheduled routine and emergency maintenance activities associated with equipment at the intakes and intermediate pumping plant would be conducted at a permanent maintenance facility at the intakes and intermediate pumping plant. The intake facilities maintenance facility would be located at one of the five intakes locations; the precise location has not yet been determined. The maintenance facility, and activities performed, at the intermediate pumping plant would likely be similar to the maintenance facility at the intakes; however, there would be no sedimentation basin (California Department of Water Resources 2010a:7-24). Replacement of erosion protection on the levees and embankments would also occur periodically.

Some of the materials used in routine facility and equipment maintenance may include hydraulic oil for lubricating machinery, fuel, batteries for vehicles and equipment, nitrogen, carbon dioxide or clear agent fire suppression, paints, cleaning solvents and chemicals, and pesticides and herbicides for grounds maintenance. Some of these materials, for example, bulk fuel and lubricants, would likely be stored in the maintenance facilities. Vehicle fueling that occurs during operations and maintenance activities and could pose the risk of fueling spills and leakage from bulk fuel storage tanks. Accidental release of fuels, lubricants, solvents, grounds care chemicals (e.g., fertilizers, pesticides and herbicides), and other hazardous materials could potentially have adverse effects if not contained or if released in large enough quantities, as described under Impact HAZ-1 above. However, under normal use, the inadvertent release of these types of chemicals would likely only have the potential to result in minor, temporary hazards to workers immediately adjacent to these releases. Because these chemicals would be used in small quantities and inadvertent releases would be localized, and because, as discussed under Impact HAZ-1, environmental commitment measures implemented as part of the HMMPs, SPCCPs, and SWPPPs, including equipping facility buildings with spill containment and cleanup kits; ensuring that hazardous materials containment containers are clearly labeled with identity, handling and safety instructions, and emergency contact; and requiring that personnel be trained in emergency response and spill containment techniques, would minimize the potential for the accidental release of hazardous materials and would help contain and remediate hazardous spills should they occur, it is unlikely that the general public or the environment would be adversely affected due to these types of activities.

The locations of airports with respect to Alternative 1A are provided in Figure 24-9. The Borges-Clarksburg, Walnut Grove, and Spezia Airports (all private air facilities), and the Byron Airport (a public airport), are within 2 miles of the Alternative 1A construction footprint (Figure 24-9 and Table 24-6), as discussed under Impact HAZ-1 for this alternative. With the exception of power transmission lines supplying power to pumps, surge towers, and other equipment used for water conveyance facilities operation and maintenance, water conveyance facilities operations and maintenance are not anticipated to require high-profile equipment (i.e., equipment with a vertical reach of 200 feet or more), the use of which near an airport runway could result in an adverse effect on aircraft. DWR would adhere to all applicable FAA regulations (14 CFR Part 77) and coordinate with Caltrans' Division of Aeronautics prior to initiating maintenance activities requiring high-profile equipment to assess whether a site investigation is necessary. If a site investigation is performed, DWR would adhere to Caltrans' recommendations in order to avoid any adverse effects on air safety. Further, compliance with the results of the OE/AAA for Byron Airport would reduce the risk for adverse effects on air traffic safety by implementing recommendations which could include limitations necessary to minimize potential problems, supplemental notice requirements, and marking and lighting high-profile structures.

In summary, during routine operation and maintenance of the water conveyance facilities the potential would exist for the accidental release of hazardous materials and other potentially

hazardous releases (e.g., contaminated solids and sediment), and for interference with air safety should high-profile equipment be required for maintenance of the proposed transmission lines near an airport. Accidental hazardous materials releases, such as chemicals directly associated with routine maintenance (e.g., fuels, solvents, paints, oils), are likely to be small, localized, temporary and periodic; therefore, they are unlikely to result in adverse effects on workers, the public, or the environment. Further, BMPs and measures implemented as part of SWPPPs, SPCCPs, and HMMPs would be developed and implemented as part of the BDCP, as described above under Impact HAZ-1, and in detail in Appendix 3B, which would reduce the potential for accidental spills to occur and would result in containment and remediation of spills, should they occur. In addition, under Mitigation Measure HAZ-6, solids from the solids lagoons would be sampled and characterized to evaluate disposal options, and disposed of accordingly at an appropriate, licensed facility. These measures would ensure that this effect would not create a substantial hazard to the public or the environment during operation and maintenance of the water conveyance facilities, and therefore there would be no adverse effect.

***CEQA Conclusion*:** The accidental release of hazardous materials to the environment during operation and maintenance of the water conveyance facilities and the potential interference with air safety through the use of high-profile equipment for maintenance of proposed transmission lines could have impacts on the public and environment. However, implementation of the BMPs and other activities required by SWPPPs, HMMPs, SPCCPs, SAPs, and Mitigation Measure HAZ-6, which would ensure that dewatered solids are not reintroduced to the environment and are properly disposed of, as well as adherence to all applicable FAA regulations (14 CFR Part 77) and coordination/compliance with Caltrans' Division of Aeronautics when performing work with high-profile equipment within 2 miles of an airport, which would include implementation of recommendations to provide supplemental notice and/or equip high-profile structures with marking and lighting, would ensure that operation and maintenance of the water conveyance facilities would not create a substantial hazard to the public, environment or air traffic safety. Therefore this impact would be less than significant.

Mitigation Measure HAZ-6: Test Dewatered Solids from Solids Lagoons Prior to Reuse and/or Disposal

BDCP proponents will ensure that dewatered solids from the solids lagoons are sampled and tested/characterized at a certified laboratory prior to reuse and/or to evaluate disposal options. All dewatered solids would be disposed of in accordance with applicable regulations.

Implementation of this measure will ensure that dewatered solids do not reintroduce hazardous constituents to the environment if they are reused and that they are disposed of properly if they do contain hazardous levels of contaminants such as persistent pesticides and mercury.

Impact HAZ-7: Create a Substantial Hazard to the Public or the Environment through the Release of Hazardous Materials or by Other Means as a Result of Implementing Conservation Measures CM2–CM11, CM13, CM14, CM16 and CM18

NEPA Effects: Construction, and operation and maintenance of the proposed conservation measures as part of Alternative 1A could have effects related to hazardous materials and potential hazards that are similar in nature to those discussed above for construction, and operation and maintenance of proposed water conveyance facilities. Although similar in nature, the potential intensity of any effects would likely be substantially lower because the nature of the activities associated with

implementing the conservation measures would be different (e.g., deep excavation for pipelines and tunnels would not be required), less heavy construction equipment would be required, and the activities would be implemented in a shorter time frame. Further, potential effects from implementation of the conservation measures would be dispersed over a larger area and would generally involve substantially fewer construction and operation effects associated with built facilities.

Implementing habitat restoration and enhancement projects in conservation zones that have proposed restoration opportunity areas would require use of construction equipment necessary to excavate restoration sites, and to construct or modify levees on and adjacent to Delta waterways. Use and maintenance of this equipment is expected to result in the potential for hazards related to the transport, use, and disposal of hazardous materials, such as fuels, oils, lubricants, paints and other hazardous substances. Other activities, including the intentional demolition of existing structures (e.g., buildings) and reuse of spoil, dredged material and/or RTM, would also present the potential to generate hazards or release hazardous materials, or activities resulting in the damage or disruption of existing infrastructure such that hazardous conditions were created. In addition, certain operations and maintenance activities, such as controlling for terrestrial and aquatic nonnative vegetation will require the use of potentially hazardous herbicides, for example. These activities would occur in sensitive Delta waterways and upland areas or could occur in and around areas potentially hazardous for construction workers and operations and maintenance workers. Reasonably foreseeable upset and accident conditions related to these materials would also create a potential hazard to the public or environment.

As discussed in Chapter 8, *Water Quality*, Chapter 11, *Fish and Aquatic Resources*, and Chapter 25, *Public Health*, Alternative 1A habitat restoration actions (particularly CM2*, Yolo Bypass Fisheries Enhancement;* CM4*, Tidal Natural Communities Restoration;* CM5*, Seasonally Inundated Floodplain Restoration;* CM6, *Channel Margin Enhancement; and* CM7 *Riparian Natural Community Restoration*) are likely to result in increased production, mobilization, and bioavailability of methylmercury in the aquatic system due to biogeochemical processes. CM12, *Methylmercury Management* provides for site-specific assessment of restoration areas, integration of design measures to minimize methylmercury production, and site monitoring and reporting.

Some of the proposed restoration activities that would occur under CM2 – CM11 could involve the conversion of active or fallow agricultural lands to natural landscapes, such as vernal pools, floodplains, grasslands, and wetlands. As described in Section 24.1.2.2, a wide variety of pesticides has been used throughout the study area for decades, and may be present in agricultural lands (e.g., in the soil). As described in Chapter 8, *Water Quality*, in the short-term, tidal and non-tidal wetland restoration, as well as seasonal floodplain restoration (i.e., CM4, CM5, and CM10) over former agricultural lands may result in contamination of water in these restored areas with pesticide residues contained in the soils or other organic matter. Present-use pesticides typically degrade fairly rapidly, and in such cases where pesticide containing soils are flooded, dissipation of those pesticides would be expected to occur rapidly. Additionally, significant increases in organochlorine and other persistent legacy pesticides are not expected in the water column because these lipophilic chemicals strongly partition to sediments. Also, concentrations in the water column should be relatively short-lived because these pesticides settle out of the water column via sediment adsorption in low-velocity flow. Accordingly, restoration activities on former agricultural lands, particularly tidal and non-tidal wetland restoration, and seasonal floodplain restoration, would not create a substantial hazard to the public or environment through pesticide release.

Additionally, construction of other conservation measures related to reducing ecosystem stressors could result in the unintended release of hazardous materials as a result of constructing facilities near Delta waterways. For example, under CM16 and CM18, non-physical fish barriers and fish hatchery facilities, respectively, would be constructed and could result in effects associated with use of materials during construction that could create hazardous conditions for construction workers and affect sensitive habitat in Delta waterways or on agricultural land. Further, operations and maintenance of CM14 would require the transport, storage and use of liquid oxygen for the existing Stockton Deep Water Ship Channel aeration facility. BMPs already in place for the existing transport, storage and use of liquid oxygen would continue. Thus, no adverse effects related to this aspect of CM14 are anticipated.

The potential also exists for release of hazardous substances within 0.25 mile of a school or other sensitive receptors (i.e., hospitals and parks) depending on the selected locations for implementing the conservation measures. Potential effects would vary according to the equipment used in construction and/or operation and maintenance of a specific conservation measures (i.e., whether hazardous materials are necessary on site), the location and timing of the actions called for in the conservation measure, and the air quality conditions at the time of implementation. Proposed conservation measures would be designed to avoid sensitive receptors, and BMPs to minimize the potential for the accidental release of hazardous materials and to contain and remediate hazardous spills, as part of the SWPPPs, SPCCPs, and HMMPs, should they occur, would be implemented, as set forth in Appendix 3B, *Environmental Commitments*, and therefore, it is unlikely that school children and staff would be at risk or adversely affected.

Constructing conservation measures that could result in a physical change in the environment could also create conflicts or encounters with known or unknown hazardous materials sites located on or in the vicinity of conservation component construction sites. For example, implementing CM2–CM11 for habitat restoration and enhancement purposes could potentially result in effects associated with agricultural and industrial-type hazardous materials at known sites that are listed on the "Cortese List." However, because locations within the eleven conservation zones (described in Chapter 3, *Description of the Alternatives*) for implementing most of the conservation measures have not yet been determined, it is not known if the conservation measures would be implemented on or near "Cortese List" sites. Project design would minimize, to the extent feasible, the need to acquire or traverse areas where the presence of hazardous materials is suspected or has been verified. Implementation of conservation measures could also involve dredging Delta waterways and other activities that could disturb contaminated sediments that hold mercury, pesticides, or other constituents. Concentrations capable of posing hazards or exceeding regulatory thresholds could present a hazard to the construction workers and any contaminated soil or groundwater would require proper handling or treatment prior to discharge or disposal. Chapter 8, *Water Quality,* provides further discussion of these potential contaminants.

Other potential hazards that could result from implementing conservation measures involve the potential for safety hazards related to construction in the vicinity of a public or private airport, and the potential for wildfire hazards in the vicinity of construction sites. There are 11 airports within the study area (Table 24-6) and nine airports within two miles of the water conveyance alignments (Figure 24-9). With the exception of the Lost Isle Seaplane Base, Franklin Field Airport and Byron Airport, these are private facilities. The Garibaldi Brothers Airport is located within the Suisun Marsh ROA, just south of Fairfield. Additionally, the Delta Air Park is proximate to the West Delta ROA east of Oakley. Because locations for some of the habitat restoration and enhancement activities have not yet been determined, the potential exists for some of these activities to occur at

locations within 2 miles of a private or public airport. High-profile construction equipment (i.e., 200 feet or taller), such as cranes, could result in potential safety hazards to aircraft if operated in the vicinity of a runway; however, it is unlikely that this type of equipment would be employed in the types of habitat restoration, enhancement and protection activities that would be implemented as part of the conservation measures. As described for Impact HAZ-4, effects on air safety due to BDCP implementation would be avoided because BDCP proponents would adhere to all applicable FAA regulations (14 CFR Part 77) and would coordinate with Caltrans' Division of Aeronautics prior to initiating maintenance activities requiring high-profile equipment to assess whether a site investigation is necessary. If a site investigation is performed, BDCP proponents would adhere to Caltrans' recommendations in order to avoid any adverse effects on air safety. Finally, construction occurring within 10,000 feet of a public airport may be subject to an OE/AAA to be performed by the FAA. Compliance with the results of the OE/AAA would reduce the risk for adverse effects on air traffic safety. Potential safety hazards to air traffic related to the potential for increased bird-aircraft strikes as a result of creating or enhancing wildlife habitat are discussed under Impact HAZ-8.

The potential for conservation component implementation to result in or be subject to substantial risk of wildfires is possible, but the risk is expected to be low because many of the activities would be located in or near Delta waterways and adjacent to managed agricultural land. Additionally, construction activities would be managed using standard construction practices to reduce the potential for creating wildfires. Precautions would be taken to prevent wildland fires during construction, and operation and maintenance of the conservation measures would be done in full compliance with Cal-OSHA standards for fire safety and prevention. Additionally, in an effort to reduce the potential for fire hazards, the BDCP proponents would develop and implement BMPs (described under Impact HAZ-5 for this alternative and in Appendix 3B, *Environmental* Commitments) under a FPCP, in coordination with federal, state, and local agencies, as part of the environmental commitments.

The potential exists for CM2–CM11, CM13, CM14, CM16, and CM18 to result in effects related to the release of or exposure to hazardous materials or other hazards. The potential for these kinds of effects is considered adverse because implementation of these conservation measures would involve extensive use of heavy equipment that could unintentionally result in the release of hazardous substances or that could expose construction workers or members of the public to hazards. Construction of restoration projects on or near existing agricultural and industrial land may result in a conflict or exposure to known hazardous materials.

In summary, this alternative has incorporated environmental commitments (as described above), and Mitigation Measures HAZ-1a, HAZ-1b, UT-6a, UT-6c, and TRANS-1a are available to reduce these potential effects so that they are not adverse.

***CEQA Conclusion*:** The potential for impacts related to the release and exposure of workers and the public to hazardous substances or conditions during construction, operation, and maintenance of CM2–CM11, CM13, CM14, CM16, and CM18 could be significant. Conservation component implementation would involve extensive use of heavy equipment during construction, and/or the use and/or transport of hazardous chemicals during operations and maintenance (e.g., herbicides for nonnative vegetation control). These chemicals could be inadvertently released and could expose construction workers or the public to hazards. Construction of restoration projects on or near existing agricultural and industrial land and/or SOCs may result in a conflict or exposure to known hazardous materials. The use of high-profile equipment (i.e., 200 feet or higher) in close proximity to airport runways could result in safety hazards to air traffic. However in addition to implementation

of SWPPPs, HMMPs, SPCCPs, SAPs, and fire prevention and fire control BMPs as part of a FPCP, Mitigation Measures HAZ-1a, HAZ-1b, UT-6a, UT-6c, and TRANS-1a would be implemented, all of which would ensure that there would be no substantial hazards to the public or the environment due to implementation of the conservation measures. As such, this impact would be less than significant.

Mitigation Measure HAZ-1a: Perform Preconstruction Surveys, Including Soil and Groundwater Testing, at Known or Suspected Contaminated Areas within the Construction Footprint, and Remediate and/or Contain Contamination

Please refer to Mitigation Measure HAZ-1a under Impact HAZ-1.

Mitigation Measure HAZ-1b: Perform Pre-Demolition Surveys for Structures to Be Demolished within the Construction Footprint, Characterize Hazardous Materials and Dispose of Them in Accordance with Applicable Regulations

Please refer to Mitigation Measure HAZ-1b under Impact HAZ-1.

Mitigation Measure UT-6a: Verify Locations of Utility Infrastructure

Please see Mitigation Measure UT-6a under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure UT-6c: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Worker and Public Health and Safety

Please see Mitigation Measure UT-6c under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management Plan

Please see Mitigation Measure TRANS-1a under Impact TRANS-1 in the discussion of Alternative 1A in Chapter 19, *Transportation*.

Impact HAZ-8: Increased Risk of Bird–Aircraft Strikes during Implementation of Conservation Measures That Create or Improve Wildlife Habitat

NEPA Effects: Implementation of CM2–CM11, measures which would create or improve wildlife habitat and therefore, potentially attract waterfowl and other birds to areas in proximity to existing airport flight zones, could increase the opportunity for bird-aircraft strikes, which could result in impacts on public safety. The following airports, because they are in relatively close proximity (within 2 miles) to the ROAs and/or conservation zones could potentially be affected: Travis Air Force Base; Rio Vista Municipal Airport; Funny Farm Airport; Sacramento International Airport, and Byron Airport.

The FAA funds research and mitigation development, including a bird strike database managed by the Wildlife Services Program of the U.S. Department of Agriculture under terms of an interagency agreement. The database currently contains data from January 1990 through August 2008, recording over 100,000 wildlife strikes. Based on these data, most bird strikes occur during daylight hours between July and October when aircraft are approaching and landing. Most bird strikes (92%)

occur at or below 3,000 feet altitude. Since 1990, 52 U.S. civil aircraft were either destroyed or damaged beyond repair due to wildlife strikes, accounting for 23 fatalities. The FAA discourages the improvement of wildlife habitat in proximity to public-use airports to lessen the risk of bird-aircraft strikes. If restoration actions are located within 5,000 feet of airports used by propeller-driven aircraft or within 10,000 feet of those used by jet-driven aircraft (known as the Critical Zone), the risk of bird-aircraft strikes would likely increase. The FAA recommends that these distances be maintained between the Air Operations Area (AOA) and land uses deemed incompatible with safe airport operations (i.e., hazardous wildlife attractants), including agriculture, water management facilities, and active wetlands. Public use airports within the study area are located in areas of mixed land uses. Some are located in proximity to urban uses, but all are located within five miles of substantial existing agricultural lands and wetlands. Thus, all of the public use airports in the study area are currently located in areas with existing wildlife hazards. The effect of increased bird-aircraft strikes during implementation of CM2–CM11 would be adverse because it could potentially result in an air and public safety hazard. Mitigation Measure HAZ-8 would reduce the severity of this effect through the development and implementation of measures to reduce, minimize and/or avoid wildlife hazards on air safety. However, this effect is would remain adverse.

CEQA Conclusion: Implementation of CM2–CM11, because they would create or improve wildlife habitat, could potentially attract waterfowl and other birds to areas in proximity to existing airport flight zones, and thereby result in an increase in bird-aircraft strikes, which could result in significant impacts on public safety. Airports that could be potentially affected would include Travis Air Force Base; Rio Vista Municipal Airport; Funny Farm Airport; Sacramento International Airport; and Byron Airport. Mitigation Measure HAZ-8 could reduce the severity of this impact through the ultimate development of implementation of measures to reduce, minimize and/or avoid wildlife hazards on air safety, but not to a less-than-significant level. As such, the impact is significant and unavoidable.

Mitigation Measure HAZ-8: Consult with Individual Airports and USFWS, and Relevant Regulatory Agencies

The FAA requires commercial service airports to maintain a safe operation, including conducting hazard assessments for wildlife attractants within 5 miles of an airport. The hazard assessment is submitted to FAA, which determines if the airport needs to develop a Wildlife Hazard Management Plan (15 CFR 139). The airport's Wildlife Hazard Management Plan contains measures to reduce wildlife hazards, including habitat modification (e.g., vegetation management, filling in of wetlands), wildlife control measures (e.g., harassment, trapping and removing), and use of a radar-based alert system.

BDCP proponents will consult with the individual airports and USFWS during the project-level environmental assessments for individual restoration activities, when site-specific locations and design plans are finalized. At that time, appropriate management plans, strategies, and protocols would be developed to reduce, minimize and/or avoid wildlife hazards on air safety. Site-specific avoidance, minimization, and mitigation measures will be developed during future environmental review once information on the design, location, and implementation of CM3–CM11 is sufficient to permit a project-level analysis.

This mitigation measure will ensure that the potential for increased bird–aircraft strikes as a result of implementing CM2–CM11 in the vicinity of airports is minimized to the greatest extent possible.

24.3.3.3 Alternative 1B—Dual Conveyance with East Alignment and Intakes 1–5 (15,000 cfs; Operational Scenario A)

Impact HAZ-1: Create a Substantial Hazard to the Public or the Environment through the Release of Hazardous Materials or by Other Means during Construction of the Water Conveyance Facilities

NEPA Effects: Hazards to the public or the environment through the routine transport, use, or disposal of hazardous materials during construction of the water conveyance facilities for Alterative 1B would be similar to those described under Alternative 1A. However, there would be differences in potential locations of effects related to the eastern alignment of this alternative. Because canals would be the primary means of water conveyance (although shorter tunnels would be constructed at river and slough crossings), construction may present a greater potential for surface effects related to hazards and hazardous materials than the Alternative 1A tunnel conveyance. Further, there would be no intermediate forebay constructed under Alternative 1B.

As described in Chapter 3, *Description of Alternatives*, six locations would be designated as temporary fueling stations during construction of Alternative 1B. Each fueling station would occupy 2 acres and each would be located adjacent to a concrete batch plant. Fueling station locations are shown in Figure 24-7 and in Figure M3-2 in the Mapbook Volume. Six fueling stations would be established in currently rural areas with two at the intakes on the northern end of the conveyance alignment—one would be located less than 0.5 miles northwest of Intake 2, just east of SR 160 across the Sacramento River from Clarksburg, and the other would be located between Intakes 4 and 5, southeast of SR 160. Three other fueling stations would be located along the length of the canal alignment (one approximately 2 miles northeast of Locke, one on northeastern King Island, and one approximately 1 mile southwest of Holt) and one fueling station would be located less than one mile southeast of Clifton Court Forebay, near the intersection of the Byron Highway and Mountain House Road on the southern end of the conveyance. For a map of all permanent facilities associated with this conveyance alignment, see Figure M3-2 in the Mapbook Volume. Bulk fuel would be stored at fueling stations and potentially pose the risk of vehicle fueling spills and leakage from above-ground storage tanks at fueling stations.

Potential hazards associated with natural gas accumulation in tunnels, existing contaminants in soil, sediment or groundwater, hazardous constituents present in RTM, infrastructure containing hazardous materials, and the disruption of existing hazardous materials transport routes would be similar to those described under Alternative 1A. However, the locations and extent of these hazards would be different than under Alternative 1A. For example, RTM would consist of materials excavated from the tunnel bores and inverted siphons where the canal alignment intersects river and slough crossings. The tunnel bores for Alternative 1B would be 1,400–5,022 feet long and advanced at a depth of approximately 160 feet bgs at these locations. There would be approximately 23.5 million cubic yards less RTM under this alternative than under Alternative 1A. In addition, there are 9 overhead power/electrical transmission lines and three natural gas pipelines (Table 24-3), five petroleum product lines (Figure 24-3), 57 inactive and four active oil or gas wells (Figure 24-5) within the proposed Alternative 1B water conveyance facilities construction footprint. There are also a number of locations where residential, agricultural and commercial structures lie within the Alternative 1B water conveyance facilities footprint. Approximately 409 permanent structures would be removed or relocated within the water conveyance facility footprint under this alternative. This includes approximately 109 residential buildings. Other structures affected would consist primarily of storage or agricultural support facilities (257), 22 recreational facilities, and 21 other

structures (e.g., power/utility structures, bridges, and other types of infrastructure). One fire station in the community of Hood would also be affected. These structures may contain hazardous materials (e.g., agricultural or other hazardous chemicals, asbestos, lead paint) that would require proper handling and disposal, if demolition is necessary. As described for Impact HAZ-1 under Alternative 1A, Mitigation Measure HAZ-1b would be implemented by DWR to ensure that there are no adverse effects related to structure demolition due to hazardous materials.

Risks associated with the transportation of hazardous materials via trucks, trains, and ships would be similar to those described under Alternative 1A but would occur in different areas. Two designated hazardous materials transportation routes, Highways 4 and 12, cross the Alternative 1B construction footprint (Figure 24-2 and in Table 24-4). It is not anticipated that traffic on these highways will need to be rerouted. Routes anticipated to be affected during construction of the water conveyance facilities are described in Chapter 19, *Transportation*. As described in Chapter 19, *Transportation*, under Mitigation Measure TRANS-1a, a site-specific construction traffic management plan, taking into account land (including rail) and marine hazardous materials transportation, would be prepared and implemented prior to initiation of water conveyance facilities construction. Mitigation Measure TRANS-1a includes stipulations to avoid or reduce potential circulation effects, such as such as providing signage, barricades, and flag people around construction work zones; notifying the public, including schools and emergency service providers of construction activities that could affect transportation; providing alternate access routes, if necessary, to maintain continual circulation in and around construction zones; and requiring direct haulers to pull over in the event of an emergency. This mitigation measure would reduce the potential for effects on hazardous materials transportation routes in the study area. The Alternative 1B water conveyance facilities alignment would cross one railroad right-of way (ROW) at the BNSF Railway/Amtrak line in San Joaquin County near Holt. Maintaining freight and passenger service on the BNSF railroad line with canal construction would be achieved by way of a siphon to be constructed under the railroad. Construction of the siphon may temporarily affect BNSF/Amtrak railroad operations. Two segments of a UPRR line would intersect with bridge facilities constructed east of the intake facilities, and other construction work areas would be immediately adjacent to an out-of-service UPRR Tracy Subdivision branch line, near the California Aqueduct at the southern end of the water conveyance facilities. If the out-of-service UPRR line were reopened prior to construction, the continuity of rail traffic, and thus the potential for hazards associated w/upset of hazardous materials transportation on this line, could be managed through implementation of Mitigation Measure TRANS-1a. Mitigation Measure TRANS-1a would include stipulations to coordinate with rail providers to develop alternative interim transportation modes (e.g., trucks or buses) that could be used to provide freight and/or passenger service during any longer term railroad closures and daily construction time windows during which construction would be restricted or rail operations would need to be suspended for any activity within railroad rights of way. This would minimize the potential risk of release of hazardous materials being transported via these rails. Under this alternative barge traffic would occur primarily in the San Joaquin River. Increased barge traffic related to delivery of materials to the project site is not anticipated to cause impediments to the passage of other vessels. Although some in-water work would be necessary for intake construction along the Sacramento River, the river would remain open to boat traffic at all times during construction, and the width of the river near the intakes (approximately 500–700 feet) would allow for passage of the types of boats typically observed on the Sacramento River. However, barges supporting water conveyance facilities construction may also transport hazardous materials such as fuels and lubricants or other chemicals. The potential exists for accidental release of hazardous materials from BDCP-related barges. To avoid effects on the environment related to this

issue, BMPs implemented as part of a Barge Operations Plan (for detail see Appendix 3B, *Environmental Commitments*), as discussed under Impact HAZ-1 for Alternative 1A would avoid and/or minimize this potential adverse effect.

In summary, during construction of the water conveyance facilities, the potential would exist for direct effects on construction personnel, the public and/or the environment associated with a variety of potentially hazardous conditions because of the intensity of construction activities at the north Delta intakes, Byron Tract Forebay, conveyance features (e.g., siphons, canals, tunnels), and the hazardous materials that would be used in these areas. Many of these activities would occur in close proximity to the town of Hood, and would involve multiple years of use of hazardous construction materials. Additionally, large-scale construction activities involving the use of hazardous materials would be located in and near water bodies. Potential hazards include the routine transport, use or disposal of hazardous materials; natural gas accumulation in water conveyance tunnels; the inadvertent release of existing contaminants in soil and groundwater, or hazardous materials in existing infrastructure to be removed; disturbance of electrical transmission lines; and hazardous constituents present in RTM. Additionally, there is the potential for the construction of the water conveyance facilities to indirectly result in the release of hazardous materials through the disruption of existing road, rail, or river hazardous materials transport routes because construction would occur in the vicinity of three hazardous material transport routes, three railroad corridors, and waterways with barge traffic and would require construction traffic that could disrupt these routes. These potential effects are considered adverse because they would potentially result in direct exposure of the public (including construction personnel), and surface water and groundwater to physical and/or chemical hazards as discussed.

As noted in the discussion of Impact HAZ-1 under Alternative 1A, project design will minimize, to the extent feasible, the need to acquire or traverse areas where the presence of hazardous materials is suspected or has been verified. Additionally, environmental commitments would be implemented, including, SWPPPs, SPCCPs, HMMPs, and SAPs; a Barge Operations Plan; and chemical characterization of RTM and decant liquid prior to reuse (e.g., RTM in levee reinforcement) or discharge, which together would help reduce these potential hazards associated with water conveyance facilities construction. Finally, the implementation of Mitigation Measures HAZ-1a and HAZ-1b; UT-6a and UT-6c (described in Chapter 20, *Public Services and Utilities*), and TRANS-1a (described in Chapter 19, *Transportation*) would further reduce the potential severity of this impact, as described for Impact HAZ-1 for Alternative 1A. As such, construction of the water conveyance facilities would not create a substantial hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or the upset/accidental release of these materials. Therefore, this effect would not be adverse.

***CEQA Conclusion*:** During construction of the water conveyance facilities, the potential would exist for direct significant impacts on construction personnel, the public and/or the environment associated with a variety of hazardous physical or chemical conditions. Such conditions may arise as a result of the intensity and duration of construction activities at the north Delta intakes, Byron Tract Forebay, conveyance pipelines, and tunnels, and because of the hazardous materials that would be used in these areas during construction. Potential hazards include the routine use of hazardous materials (as defined by Title 22 of the California Code of Regulations, Division 4.5); natural gas accumulation in water conveyance tunnels; the inadvertent release of existing contaminants in soil, sediment and groundwater, or hazardous materials in existing infrastructure to be removed; disturbance of electrical transmission lines; and potentially hazardous constituents present in RTM. Many of these physical and chemical hazards would occur in close proximity to the

town of Hood during construction of the north Delta intakes. Additionally, the potential would exist for the construction of the water conveyance facilities to indirectly result in the release of hazardous materials through the disruption of existing road, rail, or river hazardous materials transport routes because construction would occur in the vicinity of three hazardous material transport routes, three railroad corridors, and waterways with barge traffic, and would require construction traffic that could disrupt these routes. For these reasons, this is considered a significant impact. However, with the implementation of the previously described environmental commitments and Mitigation Measures HAZ-1a and HAZ-1b, UT-6a and UT-6c (described in Chapter 20, *Public Services and Utilities*), and TRANS-1a (described in Chapter 19, *Transportation*), construction of the water conveyance facilities would not create a substantial hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or the upset/accidental release of these materials. The severity of this impact would be reduced with the implementation of these environmental commitments and mitigation measures by identifying and describing potential sources of hazardous materials so that releases can be avoided and materials can be properly handled; detailing practices to monitor pollutants and control erosion so that appropriate measures are taken; implementing onsite features to minimize the potential for hazardous materials to be released to the environment or surface waters; minimizing risk associated with the relocation of utility infrastructure; and coordinating the transport of hazardous materials to reduce the risk of spills. Accordingly, this impact would be less than significant.

Mitigation Measure HAZ-1a: Perform Preconstruction Surveys, Including Soil and Groundwater Testing, at Known or Suspected Contaminated Areas within the Construction Footprint, and Remediate and/or Contain Contamination

Please refer to Mitigation Measure HAZ-1a under Impact HAZ-1 in the discussion of Alternative 1A.

Mitigation Measure HAZ-1b: Perform Pre-Demolition Surveys for Structures to Be Demolished within the Construction Footprint, Characterize Hazardous Materials and Dispose of Them in Accordance with Applicable Regulations

Please refer to Mitigation Measure HAZ-1b under Impact HAZ-1 in the discussion of Alternative 1A.

Mitigation Measure UT-6a: Verify Locations of Utility Infrastructure

Please see Mitigation Measure UT-6a under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure UT-6c: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Worker and Public Health and Safety

Please see Mitigation Measure UT-6c under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management Plan

Please see Mitigation Measure TRANS-1a under Impact TRANS-1 in the discussion of Alternative 1A in Chapter 19, *Transportation*.

Impact HAZ-2: Expose Sensitive Receptors Located within 0.25 Mile of a Construction Site to Hazardous Materials, Substances, or Waste during Construction of the Water Conveyance Facilities

NEPA Effects: There are no schools or hospitals within 0.25 mile of Alternative 1B. However, Buckley Cove Park and Nelson Park, both in Stockton, are within 0.25 mile of the construction footprint of Alternative 1B. Buckley Cove Park is west of a proposed borrow and/or spoils area across the Stockton Deep Water Ship Channel, and Nelson Park is just north of a proposed temporary 69 kV transmission line. Because large construction equipment, such as dump trucks, excavators, back hoes, and potentially cranes (for the installation of the transmission line) could be operated in these areas, there could be the potential for oil leakage from these vehicles. However, if this were to occur, it would be localized and minimal. Furthermore, environmental commitment measures (Appendix 3B, *Environmental Commitments)* implemented as part of the HMMPs, SPCCPs, and SWPPPs, including positioning all stationary equipment over drip pans, and immediately cleaning up spills and leaks and disposing of properly, will ensure that equipment leaks are contained and remediated. Further, although Buckley Cove Park and Nelson Park are within 0.25 mile of the a borrow/spoils area and a proposed transmission line, respectively, the parks are not in close enough proximity to the associated construction areas to be affected by potential hazards such as minor leaks or spills of hazardous materials as may occur with the construction activities. Therefore, people at these parks would not be at risk or adversely affected by exposure to hazardous materials, substances, or waste during construction of the water conveyance facilities. As such, there would be no adverse effect on sensitive receptors. Potential air quality effects on sensitive receptors are discussed in Chapter 22, *Air Quality and Greenhouse Gases*, and potential EMF effects on sensitive receptors are discussed in Chapter 25, *Public Health.*

CEQA Conclusion: Buckley Cove and Nelson Parks in Stockton are within 0.25 mile of the construction footprint of Alternative 1B. Buckley Cove Park is west of a proposed borrow and/or spoils area across the Stockton Deep Water Ship Channel, and Nelson Park is just north of a proposed temporary 69 kV transmission line. Heavy construction equipment, such as dump trucks, diggers, back hoes, and potentially cranes, would be operating in these areas during construction, and there would be the potential for these vehicles to leak oil. However, if this were to occur, the leaks would be localized and minimal. Furthermore, environmental commitment measures (Appendix 3B, *Environmental Commitments)* implemented as part of the HMMPs, SPCCPs, and SWPPPs, including positioning all stationary equipment over drip pans, and immediately cleaning up spills and leaks and disposing of properly, will ensure that equipment leaks are contained and remediated. In addition, although Buckley Cove and Nelson Parks are within 0.25 mile of a proposed borrow/spoils area and a proposed temporary 69 kV transmission line, respectively, these parks are not in close enough proximity to these construction areas to be affected by potential hazards such as minor leaks or spills of hazardous materials as may occur with the construction activities. Therefore, people at these parks would not be at risk or affected by exposure to hazardous materials, substances, or waste during construction of the water conveyance facilities, and as such, this impact is less than significant. No mitigation is required. Potential air quality effects on sensitive receptors are discussed in Chapter 22, *Air Quality and Greenhouse Gases*, and potential EMF effects on sensitive receptors are discussed in Chapter 25, *Public Health.*

Impact HAZ-3: Potential to Conflict with a Known Hazardous Materials Site and, as a Result, Create a Significant Hazard to the Public or the Environment

NEPA Effects: Effects related to SOCs would be similar to those described under Alternative 1A. Figure 24-4 shows the location of SOCs and "Cortese List" sites with respect to the Alternative 1B construction footprint, and sites in and within 0.5 mile of the construction footprint are identified in Table 24-5. For those hazardous materials sites identified within the 0.5-mile radius but which are not within the construction footprint, there would be no potential for the construction of the water conveyance facilities to disturb those sites such that there would be a re-release of hazardous materials that would create a hazard for the public or environment.

The Kinder Morgan Energy pipeline access station, an SOC in Stockton, is within the construction footprint of a proposed temporary 69 kV transmission line for this alternative. Similarly, the Sarale Farms site (a "Cortese List" site) is located within the construction footprint of a proposed temporary 69 kV transmission line at the southern end of the water conveyance facilities alignment, approximately 1.5 miles east of Clifton Court Forebay (Figure 24-4 and Figure M3-2 in the Mapbook Volume). A 10,000-gallon petroleum UST was removed from the Sarale Farms site in 1992; soil and groundwater contain petroleum products in excess of cleanup standards. The San Joaquin County Environmental Health Department issued a letter in December 2008 requiring continued monitoring of groundwater and additional assessment of groundwater for petroleum.

Construction activities on or in close proximity to the Sarale Farms site could result in the re-release of petroleum products, either airborne soil during excavation activities, or by encountering contaminated groundwater during dewatering activities or deep excavation. Because construction of the temporary transmission line would not entail deep excavation or require dewatering activities, no conflict with existing hazards at this site are anticipated. However, if dewatering and/or deep excavation were required in this area contaminated groundwater could be drawn up and/or contaminated soils may be disturbed, respectively. Improper disposal of contaminated excavated soils or groundwater would have the potential to adversely affect the environment. To avoid this potential adverse effect, Mitigation Measure HAZ-1a would be implemented to ensure that any known or suspected soil and/or groundwater contamination is not re-released. Further, design of the transmission line, including pole placement, would avoid the Kinder Morgan Energy and Sarale Farms sites to the extent practicable to ensure there were no adverse hazardous effects associated with construction on or in close proximity to these sites.

For those hazardous materials sites identified within the 0.5-mile radius but which are not within the construction footprint, there would be no potential for the construction of the water conveyance facilities to disturb those sites such that there would be a re-release of hazardous materials that would create a hazard for the public or environment. Therefore, this effect would not be adverse. The potential for encountering unknown hazardous materials sites during the course of construction is discussed under Impact HAZ-1, above.

***CEQA Conclusion*:** The re-release of hazardous materials during construction (dewatering and/or deep excavation) at the Sarale Farms site or the Kinder Morgan Energy pipeline access station site within the construction footprints for proposed temporary 69 kV transmission lines could result in a significant impact if contaminated groundwater and/or soils were rereleased. However, a significant impact on the environment would be avoided with implementation of Mitigation Measure HAZ-1a, which would identify and describe potential sources of hazardous materials so that releases can be avoided and materials can be properly handled. Further, project design would minimize, to the

extent feasible, the need to traverse areas where the presence of hazardous materials is suspected or has been verified, or where interference with existing infrastructure might result in hazards. As a result, there would be a less than significant impact on the public and/or environment because construction of the water conveyance facilities near the Kinder Morgan Energy pipeline access station site and the Sarale Farms site would not result in hazardous materials releases from these sites. The potential for encountering other unknown hazardous materials sites during the course of construction is discussed under Impact HAZ-1, above.

Mitigation Measure HAZ-1a: Perform Preconstruction Surveys, Including Soil and Groundwater Testing, at Known or Suspected Contaminated Areas within the Construction Footprint, and Remediate and/or Contain Contamination

Please refer to Mitigation Measure HAZ-1a under Impact HAZ-1 in the discussion of Alternative 1A. Implementation of this mitigation measure will result in the avoidance, successful remediation or containment of all known or suspected contaminated areas, as applicable, within the construction footprint, which would prevent the release of hazardous materials from these areas into the environment.

Impact HAZ-4: Result in a Safety Hazard Associated with an Airport or Private Airstrip within 2 Miles of the Water Conveyance Facilities Footprint for People Residing or Working in the Study Area during Construction of the Water Conveyance Facilities

NEPA Effects: Development around an airport, particularly in the approach and departure paths, can create obstructions in the airspace traversed by an approaching or departing aircraft. Additionally, certain land uses have the potential to create hazards to aircraft such as a distracting glare, smoke, steam, or invisible heat plumes. Safety impacts from aircraft accidents near airports are typically avoided by specifying the types of land uses allowed, and thereby limiting the number of people who would be exposed to the risk of an accident, and avoiding land uses that could create hazards to air traffic. Airspace protection primarily involves limitations on the height of objects on the ground near airports.

As shown in Figure 24-9, the Borges-Clarksburg Airport, Byron Airport, and Lost Isle Seaplane Base are within 2 miles of the Alternative 1B water conveyance facilities. The Borges-Clarksburg Airport is a private, special-use airport less that 0.5 mile northeast of the construction footprint for Intake 1. The Lost Isle Seaplane Base, on Spud Island, is within 2 miles of the proposed permanent 69 kV transmission line. Byron Airport is within 2 miles of the construction footprints for the following proposed water conveyance features: Byron Tract forebay; a borrow and/or spoils area south of Clifton Court Forebay; a temporary 12 kV transmission line; and a permanent 230 kV transmission line. The Lost Isle Seaplane Base and Byron Airport are public use airports and are subject to FAA regulations regarding construction within 10,000 feet. Additionally, construction of a state building or enclosure within 2 miles of any airport is subject to review of Caltrans' Division of Aeronautics for safety and noise effects. With the exception of the proposed transmission lines, construction of these features or work in these areas would not require the use of high-profile construction equipment. Because construction of the proposed transmission lines would potentially require high-profile equipment (e.g., cranes), and because construction of the 230 kV transmission line would require the use of helicopters during the stringing phase, the safety of air traffic arriving or departing from either of these airports could be compromised during construction of the proposed transmission lines.

In the event final locations for any state building or enclosure are within 2 miles of any airport, Caltrans' Division of Aeronautics would require written notification and a review would be performed; DWR would comply with Caltrans' recommendations (e.g., marking and/or lighting of temporary or permanent structures exceeding an overall height of 200 feet above ground level) based on this review to ensure there are no adverse effects on air safety. Further, depending on the location and height of any high-profile construction equipment or structures (e.g., proposed transmission lines and towers) relative to the Lost Isle Seaplane Base and Byron Airport, because they are public air facilities, the BDCP may be subject to an OE/AAA to be performed by the FAA (14 CFR Part 77), as discussed under Impact HAZ-4 for Alternative 1A. Compliance with the results of the OE/AAA would also reduce the risk of adverse effects on air safety. As such, there would be no adverse effects on air safety.

CEQA Conclusion: The use of helicopters for stringing the proposed 230 kV transmission lines and of high-profile construction equipment (200 feet or taller), such as cranes, for installation of pipelines, placement of concrete fill in intake piles, and removal of cofferdam sheet piles, for example, and potentially pile drivers, such as would be used during the construction of the intakes, have the potential to result in safety hazards to aircraft during takeoff and landing if the equipment is operated too close to runways. Two public airports (Lost Isle Seaplane Base and Byron Airport) and one private airport (Borges-Clarksburg Airport) are located within 2 miles of the construction footprint of Alternative 1B. DWR would coordinate with Caltrans' Division of Aeronautics prior to initiating construction and comply with its recommendations based on its investigation(s), as well comply with the recommendations of the OE/AAA (for Byron Airport and the Lost Isle Seaplane Base), impacts on air safety would be less than significant. These recommendations, which could include limitations necessary to minimize potential problems such as the use of temporary construction equipment, supplemental notice requirements, and marking and lighting high-profile structures, would reduce the potential for impacts on air safety. Accordingly, this impact would be less than significant. No mitigation is required.

Impact HAZ-5: Expose People or Structures to a Substantial Risk of Property Loss, Personal Injury or Death Involving Wildland Fires, Including Where Wildlands Are adjacent to Urbanized Areas or Where Residences Are Intermixed with Wildlands, as a Result of Construction, and Operation and Maintenance of the Water Conveyance Facilities

NEPA Effects: Hazards related to wildland fires would be similar to those described under Alternative 1A. The northernmost and southernmost extent of this conveyance alignment, where fueling stations and the Byron Tract Forebay would be constructed, would be adjacent to zones of moderate fire hazard severity (Figure 24-10).

As described under Impact HAZ-5 for Alternative 1A and in Appendix 3B, *Environmental Commitments*, fire prevention and control measures would be implemented, as part of a FPCP, during construction, and operation and maintenance of the water conveyance facilities in full compliance with Cal-OSHA standards for fire safety and prevention. Because development and implementation of measures under the FPCP would help ensure that people or structures would not be subject to a substantial risk of loss, injury or death involving wildland fires, and because the proposed water conveyance facilities would not be located in a High or Very High Fire Hazard Severity Zone, this effect would not be adverse.

CEQA Conclusion: People or structures would not be subject to a substantial risk of loss, injury or death involving wildland fires during construction or operation and maintenance of the water

conveyance facilities because the BDCP would comply with Cal-OSHA fire prevention and safety standards; DWR would implement standard fire safety and prevention measures, as part of a FPCP; and because the water conveyance facilities would not be located in a High or Very High Fire Hazard Severity Zone. Therefore, this impact would be less than significant. No mitigation is required.

Impact HAZ-6: Create a Substantial Hazard to the Public or the Environment through the Release of Hazardous Materials or by Other Means during Operation and Maintenance of the Water Conveyance Facilities

NEPA Effects: Potential hazards related to the long-term operation and maintenance of the water conveyance facilities would be similar to those described for Alternative 1A, particularly with respect to intakes and intake pumping plants. This alternative may require the transport, storage, and use of chemicals or hazardous waste materials including fuel, oils, grease, solvents, and paints. Solids collected at the solids lagoons, and dredged sediment from around the intakes may contain hazardous constituents (e.g., persistent pesticides, mercury, PCBs).

Under Alternative 1B, differences in potential hazards relative to Alternative 1A could generally result from variations in operational and maintenance activities with respect to canals, culvert siphons, and control structures along this water conveyance facilities alignment. However, the potential for hazards associated with operation and maintenance of tunnel segments and those relating to the intermediate forebay would be decreased because only short tunnel segments under existing channels would be operated and maintained and because this alternative would not include an intermediate forebay.

As noted above (Impact HAZ-4 for this alternative), the Borges-Clarksburg Airport, Byron Airport and Lost Isle Seaplane Base are within 2 miles of the Alternative 1B water conveyance facilities. With the exception of the proposed power transmission lines and towers, water conveyance facilities are not anticipated to require the use of high-profile equipment during operations and maintenance. Depending on the location and height (i.e., 200 feet or taller) of any equipment necessary for transmission line maintenance, the Lost Isle Seaplane Base and Byron Airport, because they are public air facilities, would be subject to an OE/AAA to be performed by the FAA. Compliance with the results of the OE/AAA, as well as any applicable FAA regulations regarding potential obstructions to air navigation (14 CFR Part 77) would reduce the risk of adverse effects on air safety. Additionally, DWR would coordinate with Caltrans' Division of Aeronautics prior to any maintenance activities requiring high-profile maintenance equipment and comply with any air safety recommendations Caltrans may have to ensure that there is no conflict with or adverse effect on air traffic. Compliance with the results of the OE/AAA would reduce the risk for adverse effects on air traffic safety by implementing recommendations which could include limitations necessary to minimize potential problems, supplemental notice requirements, and marking and lighting high-profile structures. Thus, there would be no adverse effects on air safety.

Potential releases of hazardous materials, if released in substantial quantities, associated with operations and maintenance of the water conveyance facilities under this alternative could result in an adverse effect on workers, the public (including sensitive receptors within 0.25 mile of the construction footprint), and the environment. As indicated under Impact HAZ-2 for this alternative, Buckley Cove and Nelson Parks in Stockton are within 0.25 mile of a proposed borrow/spoils area and a proposed temporary 69 kV transmission line, respectively. Because the proposed 69 kV transmission line is temporary, it would be removed following completion of the water conveyance facilities, and therefore no maintenance activities would occur in this area. No maintenance

activities would take place in the borrow/spoils area, per se; however, should the spoils be used at some later time, heavy construction equipment such as dump trucks and excavators would be needed to move the spoils. Consequently there could be the potential for oil leakage from these vehicles. However, if this were to occur, it would be localized and minimal. Furthermore, environmental commitment measures (Appendix 3B, *Environmental Commitments)* implemented as part of the HMMPs, SPCCPs, and SWPPPs, including positioning all stationary equipment over drip pans, and immediately cleaning up spills and leaks and disposing of properly, will ensure that equipment leaks are contained and remediated. Other water conveyance features such as the intakes. There would be a risk of accidental spills of hazardous materials (e.g., fuels, solvents, paints, pesticides and herbicides) during facility operations and maintenance, such as painting the intake and intermediate pumping plants, maintaining pumps at the intake and intermediate pumping plants, and applying pesticides and herbicides to the landscaped areas at the pumping plants. However, the quantities of hazardous materials likely to be used during these types of routine operations and maintenance activities are likely to be small, and, were they to be released inadvertently, they would be localized. Such spills could result in minor, temporary potential hazards to workers immediately adjacent to these releases; however, environmental commitment measures implemented as part of the HMMPs, SPCCPs, and SWPPPs, including equipping facility buildings with spill containment and cleanup kits; ensuring that hazardous materials containment containers are clearly labeled with identity, handling and safety instructions, and emergency contact; and requiring that personnel be trained in emergency response and spill containment techniques, would minimize the potential for the accidental release of hazardous materials and would help contain and remediate hazardous spills should they occur. Therefore, operation and maintenance workers, the public (including sensitive receptors within 0.25 miles of the construction footprint), and the environment would not be at risk or adversely affected by hazardous materials due to the proximity of the park to the water conveyance facilities.

Sediment and solids removal from the sedimentation basins and solids lagoons, respectively, and removal of accumulated sediment at the face of the intakes is expected to be an ongoing process during operation of the water conveyance facilities. The annual volume of solids under this alternative is anticipated to be 486,000 cubic feet (dry solids basis). Sediment and dewatered solids may contain hazardous constituents such as persistent pesticides and mercury that could pose a hazard to the environment if improperly disposed of. Implementation of Mitigation Measure HAZ-6 would require the sampling and characterization of dewatered solids prior to reuse or disposal in order to evaluate disposal/reuse options to avoid adverse effects on soil, groundwater or surface water. To ensure that potentially contaminated sediment from maintenance dredging activities at the intakes would not adversely affect soil, groundwater or surface water, a SAP would be implemented prior to any dredging activities, as described under Impact HAZ-1 for this alternative. All sediment would be characterized chemically prior to reuse to ensure that reuse of this material would not result in a hazard to the public or the environment. Accordingly, there would be no adverse effect.

***CEQA Conclusion*:** The accidental release of hazardous materials to the environment during operation and maintenance of the water conveyance facilities and the potential interference with air safety through the use of high-profile equipment for maintenance of proposed transmission lines could have impacts on the public and environment. However, implementation of the BMPs and other activities required by SWPPPs, HMMPs, SPCCPs, SAPs, and Mitigation Measure HAZ-6, which would ensure that dewatered solids are not reintroduced to the environment and are properly disposed of, as well as adherence to all applicable FAA regulations (14 CFR Part 77) and

coordination/compliance with Caltrans' Division of Aeronautics when performing work with high-profile equipment within 2 miles of an airport, which would include implementation of recommendations to provide supplemental notice and/or equip high-profile structures with marking and lighting, would ensure that operation and maintenance of the water conveyance facilities would not create a substantial hazard to the public, environment or air traffic safety. Therefore, this impact would be less than significant.

Mitigation Measure HAZ-6: Test Dewatered Solids from Solids Lagoons Prior to Reuse and/or Disposal

Please refer to Mitigation Measure HAZ-6 under Impact HAZ-6 in the discussion of Alternative 1A.

Impact HAZ-7: Create a Substantial Hazard to the Public or the Environment through the Release of Hazardous Materials or by Other Means as a Result of Implementing Conservation Measures CM2-CM11, CM13, CM14, CM16 and CM18

NEPA Effects: The potential for construction, operation, and maintenance activities associated with the implementation of conservation measures (CM2–CM11, CM13, CM 14, CM16, and CM18) to create hazards to workers, the public, and the environment would be similar to the potential effects described under Alternative 1A. Potential variation from Alternative 1A would be anticipated to be minor but could result from the selection of different areas for restoration activities based on the location of the physical water conveyance features associated with each alternative.

Hazardous materials associated with the operation of construction equipment could be released into the environment in the course of the materials' routine transport, use, or disposal. Releases could also occur as a result of accidental circumstances. Similarly, construction activities could encounter known or unknown hazardous materials sites located on or in the vicinity of construction sites, creating the potential for hazardous materials disturbance and release. Other activities, including the intentional demolition of existing structures (e.g., buildings) and reuse of spoil, dredged material and/or RTM would also present the potential to generate hazards or release hazardous materials. However, prior to the reuse of spoils, dredged material or RTM, these materials would undergo chemical characterization, as described in Appendix 3B, *Environmental Commitments*, to ensure that they are not creating a hazard to the public and environment.

Further, other potential hazards that could result from implementing conservation measures include the possible release of hazardous substances in proximity to sensitive receptors; the accidental release of hazardous substances during operation and maintenance (e.g., herbicides for nonnative vegetation control); the release, in the short-term, of pesticides from former agricultural lands as a result of wetland and floodplain restoration; the potential for safety hazards related to construction in the vicinity of an airport; damage or disruption of existing infrastructure such that hazardous conditions were created; and the potential for wildfire hazards in the vicinity of construction sites. These potential effects, were they to occur, would be adverse. However, as discussed for Impact HAZ-7 under Alternative 1A, with implementation of Mitigation Measures HAZ-1a, HAZ-1b; UT-6a, UT-6c, TRANS-1a, and environmental commitments (discussed previously for Impacts HAZ-1 through HAZ-6, and in detail in Appendix 3B, *Environmental Commitments*), the potential for adverse effects would be reduced. Additionally, the proposed conservation measures would be designed to avoid sensitive receptors and would minimize, to the extent feasible, the need

to acquire or traverse areas where the presence of hazardous materials is suspected or has been verified. Consequently, this effect would not be adverse.

Potential safety hazards to air traffic related to the potential for increased bird-aircraft strikes as a result of creating or enhancing wildlife habitat are discussed under Impact HAZ-8.

CEQA Conclusion: The potential for impacts related to the release of, and exposure of workers and the public to, hazardous substances or conditions during construction, operation, and maintenance of CM2–CM11, CM13, CM14, CM16, and CM18 could be significant. Conservation component implementation would involve extensive use of heavy equipment during construction, and/or the use and/or transport of hazardous chemicals during operations and maintenance (e.g., herbicides for nonnative vegetation control). Hazardous materials could be inadvertently released, exposing construction workers or the public to hazards. Construction of restoration projects on or near existing agricultural and industrial land and/or SOCs may result in a conflict or exposure to known hazardous materials, and the use of high-profile equipment (i.e., 200 feet or higher) in close proximity to airport runways could result in safety hazards to air traffic. However, in addition to implementation of SWPPPs, HMMPs, SPCCPs, SAPs and fire safety and prevention BMPs as part of a FPCP, Mitigation Measures HAZ-1a, HAZ-1b, UT-6a, UT-6c, and TRANS-1a would be implemented, all of which would ensure that there would be no substantial hazards to the public or the environment due to implementation of the conservation measures. As such, this impact would be less than significant.

Mitigation Measure HAZ-1a: Perform Preconstruction Surveys, Including Soil and Groundwater Testing, at Known or Suspected Contaminated Areas within the Construction Footprint, and Remediate and/or Contain Contamination

Please refer to Mitigation Measure HAZ-1a under Impact HAZ-1 in the discussion of Alternative 1A.

Mitigation Measure HAZ-1b: Perform Pre-Demolition Surveys for Structures to Be Demolished within the Construction Footprint, Characterize Hazardous Materials and Dispose of Them in Accordance with Applicable Regulations

Please refer to Mitigation Measure HAZ-1b under Impact HAZ-1 in the discussion of Alternative 1A.

Mitigation Measure UT-6a: Verify Locations of Utility Infrastructure

Please see Mitigation Measure UT-6a under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure UT-6c: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Worker and Public Health and Safety

Please see Mitigation Measure UT-6c under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management Plan

Please see Mitigation Measure TRANS-1a under Impact TRANS-1 in the discussion of Alternative 1A in Chapter 19, *Transportation*.

Impact HAZ-8: Increased Risk of Bird–Aircraft Strikes during Implementation of Conservation Measures That Create or Improve Wildlife Habitat

NEPA Effects: The potential for implementation of conservation measures that create or improve wildlife habitat (CM2–CM11) to create hazards air and public safety through increased bird-aircraft strikes would be similar to the potential effects described under Alternative 1A. Potential variation from Alternative 1A would be anticipated to be minor but could result from the selection of different areas for restoration activities based on the location of the physical water conveyance features associated with each alternative. Such variation may result greater or less opportunity for bird-aircraft strikes depending on the location's proximity to airport flight zones. The following airports, because they are in relatively close proximity (within 2 miles) to the ROAs and/or conservation zones could potentially be affected: Travis Air Force Base; Rio Vista Municipal Airport; Funny Farm Airport; Sacramento International Airport, and Byron Airport.

The effect of increased bird-aircraft strikes during implementation of CM2–CM11 would be adverse because it could potentially result in an air and public safety hazard. Mitigation Measure HAZ-8 would reduce the severity of this effect through the development and implementation of measures to reduce, minimize and/or avoid wildlife hazards on air safety. However, this effect is would remain adverse.

***CEQA Conclusion*:** Implementation of CM2–11, because they would create or improve wildlife habitat, could potentially attract waterfowl and other birds to areas in proximity to existing airport flight zones, and thereby result in an increase in bird-aircraft strikes, which could result in significant impacts on public safety. The following airports, because they are in relatively close proximity (within 2 miles) to the ROAs and/or conservation zones could potentially be affected: Travis Air Force Base; Rio Vista Municipal Airport; Funny Farm Airport; Sacramento International Airport, and Byron Airport. Mitigation Measure HAZ-8 could reduce the severity of this impact through the ultimate development and implementation of measures to reduce, minimize and/or avoid wildlife hazards on air safety, but not to a less-than-significant level. As such, the impact is significant and unavoidable.

Mitigation Measure HAZ-8: Consult with Individual Airports and USFWS, and Relevant Regulatory Agencies

Please refer to Mitigation Measure HAZ-8 under Impact HAZ-8 in the discussion of Alternative 1A. This mitigation measure will ensure that the potential for increased bird – aircraft strikes as a result of implementing CM2–CM11 in the vicinity of airports are minimized to the greatest extent possible.

24.3.3.4 Alternative 1C—Dual Conveyance with West Alignment and Intakes W1–W5 (15,000 cfs; Operational Scenario A)

Impact HAZ-1: Create a Substantial Hazard to the Public or the Environment through the Release of Hazardous Materials or by Other Means during Construction of the Proposed Water Conveyance Facilities

NEPA Effects: For the duration of construction of the water conveyance facilities, potential hazards associated with the routine use of hazardous materials; natural gas accumulation in tunnels; existing contaminants in soil, groundwater, or sediment; hazardous constituents present in RTM; infrastructure containing hazardous materials; and the routine transport of hazardous materials would be similar to those described under Alternative 1A. Variation in the structures built for water conveyance under this alternative, however, could result in differences in the location, extent, and type of potential hazards occurring through the release of hazardous materials. Potential differences are described below.

As under Alternative 1A, this alternative would also build five temporary fueling stations and an on-site maintenance facility; however, their locations would differ from those built under Alternative 1A and are shown in Figure 24-7 and Figure M3-3 in the Mapbook Volume. Fueling stations would be established in currently rural areas along the conveyance alignment. The northernmost fueling station would be located approximately 0.5 mile northwest of downtown Courtland; one would be located between intakes 3 and 4, less than 1 mile southwest of the town of Hood; the third and fourth fueling stations would be on Ryer Island, and at the southwest corner of Webb Tract, respectively; and fifth and southernmost fueling station would be on the southwest side of Clifton Court forebay.

Materials such as oils, lubricants, paints, and sealants would be stored on-site and used in construction equipment and activities; spills and releases of these materials could occur in temporary work areas identified for the construction of water conveyance facilities (Figure M3-3 in the Mapbook Volume). While the potential for release would be similar to that described under Alternative 1A, the geographic extent of possible hazards would be different. Other variations could arise from the relatively shorter length of conveyance pipeline that would be constructed under this alternative.

The shorter length and different location of tunnel construction under this alternative would lead to a potential for hazards associated with tunnels that would vary in extent and location from those described under Alternative 1A. Natural gas accumulation in tunnels would also potentially result from construction of Alternative 1C; however, as discussed for Impact HAZ-1 under Alternative 1A, because gas wells are typically at a depth of 3000 feet or greater, it is unlikely that a natural gas field will be encountered during tunnel construction because the tunnel would only be approximately 150 to 160 feet underground.

Potential hazards related to RTM constituents would also result from construction of this alternative. Again, while the nature of effects stemming from tunnel construction would be similar to those described for Alternative 1A, the extent and location of these effects would vary. Approximately 13 million cubic yards of RTM are expected to be generated during construction of the Alternative 1C water conveyance facilities, compared with about 25 million cubic yards for Alternative 1A. As described above under Impact HAZ-1 for Alternative 1A, if the tunnels receive a "gassy or extra hazardous" classification, specialized MSHA-approved tunneling equipment would

be required, as would compliance with other Cal-OSHA requirements in accordance with The Tunnel Safety Orders set forth in the California Code of Regulations (Title 8, Division 1, Chapter 4, Subchapter 20, Article 8, "Tunnel Classifications" [see Section 24.2.2.13) to provide safe work conditions during tunneling. Adherence to these regulations would reduce hazards posed by accumulation of natural gas in tunnels. Additionally, only non-toxic, biodegradable soil conditioners would be used during tunneling to ensure that the RTM and associated decant liquid do not pose a hazard to terrestrial and aquatic organisms. Additionally, RTM would undergo chemical characterization prior to reuse. RTM and decant liquid would also undergo chemical characterization prior to discharge to meet NPDES and RWQCB requirements. Should constituents in RTM or decant liquid exceed discharge limits, these tunneling byproducts would be treated to comply with discharge permit requirements.

As under Alternative 1A, construction of the water conveyance facilities for Alternative 1C would potentially conflict with existing contaminants in soil, sediment and/or groundwater. Oil and gas processing facilities that exist near the construction footprint are shown in Figure 24-1. To the extent that excavation, dewatering, and other activities are associated with the construction of canals and culvert siphons, the extent of these potential hazards would be substantially greater under this alternative than with Alternative 1A, which would have only one relatively short canal segment and no culvert siphons). To the extent feasible, design of this alternative would minimize the need to acquire or traverse areas where the presence of hazardous materials is suspected or has been verified.

Infrastructure and structures in the study area containing hazardous materials cross the Alternative 1C conveyance alignment and construction footprint (Figures 24-3, 24-5, and 24-6). There are 9 overhead power/electrical transmission lines (two with multiple crossings [Figure 24-6]), five natural gas pipelines (Figure 24-3), and 47 inactive and nine active oil or natural gas wells (Figure 24-5) within the proposed Alternative 1C water conveyance facilities construction footprint. Table 24-3 provides the number and types of regional electrical transmission and pipelines crossing this water conveyance facilities alignment.

Additionally, approximately 726 permanent structures would be removed or relocated within the water conveyance facility footprint under this alternative. This includes approximately 194 residential buildings. Other structures affected would consist primarily of storage or agricultural support facilities; however, several industrial and recreational structures would also be affected. As described under Alternative 1A, these structures may contain hazardous materials that would require proper handling and disposal, if demolition is necessary. Disturbance of this infrastructure during construction of the water conveyance facilities could result in hazards similar to those described under Alternative 1A. As described for Impact HAZ-1 under Alternative 1A, Mitigation Measure HAZ-1b would be implemented by DWR to ensure that there are no adverse effects related to structure demolition due to hazardous materials. As described previously, Mitigation Measure HAZ-1b would require that DWR coordinate with existing property owners to identify existing potentially hazardous infrastructure and infrastructure containing potentially hazardous materials, and that DWR perform pre-demolition surveys in order to identify and characterize hazardous materials to ensure the safe and appropriate handling and disposal of these materials. Risks associated with the transportation of hazardous materials via trucks, trains, and ships would be similar to those described under Alternative 1A but would occur in different areas. Three designated hazardous materials transportation routes, Byron Highway, and State Highways 4 and 12, cross the construction footprint of this alternative (Figure 24-2 and in Table 24-4). Routes anticipated to be affected during construction of the water conveyance facilities are listed in Chapter 19,

Transportation. Under Mitigation Measure TRANS-1a, a site-specific construction traffic management plan, taking into account hazardous materials transportation, would be prepared and implemented prior to initiation of water conveyance facilities construction. As discussed under Impact HAZ-1 for Alternative 1A, BMPs implemented as part of this plan would reduce the potential for effects on hazardous materials transportation routes in the study area. The Alternative 1C water conveyance facilities alignment would cross four railroad ROWs, 2 active and 1 abandoned UPRR lines, and a BNSF line (Table 24-4). A culvert siphon is proposed to carry the canal under the BNSF line between Sunset Road and Orwood Road. Because this crossing is in a construction work area, train operations along the BNSF Railway/Amtrak San Joaquin Line could be affected. Construction of this alternative would cross other rail lines, including an out-of-service UPRR line. If the abandoned UPRR were reopened prior to construction, the continuity of rail traffic, and thus the potential for hazards associated w/upset of hazardous materials transportation on this line, could be managed through implementation of Mitigation Measure TRANS-1a. Mitigation Measure TRANS-1a would include stipulations to coordinate with rail providers to develop alternative interim transportation modes (e.g., trucks or buses) that could be used to provide freight and/or passenger service during any longer term railroad closures and daily construction time windows during which construction would be restricted or rail operations would need to be suspended for any activity within railroad rights of way. This would minimize the potential risk of release of hazardous materials being transported via subject rails. Construction of Alternative 1C would not substantially increase the volume of barge movement within the study area such that existing marine traffic would be disrupted and potentially increase the risk for hazards related to such disruption. However, barges supporting water conveyance facilities construction may also transport hazardous materials such as fuels and lubricants or other chemicals. The potential exists for accidental release of hazardous materials from BDCP-related barges. To avoid effects on the environment related to this issue, BMPs implemented as part of a Barge Operations Plan (for detail see Appendix 3B, *Environmental Commitments*), as discussed under Impact HAZ-1 for Alternative 1A would avoid and/or minimize this potential adverse effect. In summary, during construction of the water conveyance facilities, the potential would exist for direct effects on construction personnel, the public and/or the environment associated with a variety of potentially hazardous conditions because of the intensity of construction activities at the north Delta intakes, Byron Tract forebay, conveyance features (e.g., siphons, canals, tunnels), and the hazardous materials that would be used in these areas. Many of these activities would occur in close proximity to the town of Hood, and would involve multiple years of use of hazardous construction materials. Additionally, large-scale construction activities involving the use of hazardous materials would be located in and near water bodies. Potential hazards include the routine transport, use or disposal of hazardous materials; natural gas accumulation in water conveyance tunnels; the inadvertent release of existing contaminants in soil and groundwater, or hazardous materials in existing infrastructure to be removed; disturbance of electrical transmission lines; and hazardous constituents present in RTM. Additionally, there is the potential for the construction of the water conveyance facilities to indirectly result in the release of hazardous materials through the disruption of existing road, rail, or river hazardous materials transport routes because construction would occur in the vicinity of three hazardous material transport routes, three railroad corridors, and waterways with barge traffic and would require construction traffic that could disrupt these routes. These potential effects are considered adverse because they would potentially result in direct exposure of the public (including construction personnel), and surface water and groundwater to physical and/or chemical hazards as discussed.

As noted in the discussion of Impact HAZ-1 under Alternative 1A, project design will minimize, to the extent feasible, the need to acquire or traverse areas where the presence of hazardous materials

is suspected or has been verified. Additionally, environmental commitments would be implemented, including, SWPPPs, SPCCPs, HMMPs, and SAPs; chemical characterization of RTM prior to reuse (e.g., RTM in levee reinforcement) or discharge; and a Barge Operation Plan, which together would reduce these potential hazards associated with construction of the water conveyance facilities. Finally, the implementation of Mitigation Measures HAZ-1a and HAZ-1b, UT-6a and UT-6c (described in Chapter 20, *Public Services and Utilities*), and TRANS-1a (described in Chapter 19, *Transportation*) would further reduce the potential severity of this impact. As such, construction of the water conveyance facilities would not create a substantial hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or the upset/accidental release of these materials. Therefore, this effect would not be adverse.

CEQA Conclusion: During construction of the water conveyance facilities under Alternative 1C, the potential would exist for direct significant impacts on construction personnel, the public and/or the environment associated with a variety of hazardous physical or chemical conditions. Such conditions may arise as a result of the intensity and duration of construction activities at the north Delta intakes, Byron Tract Forebay, conveyance pipelines and tunnels, and because of the hazardous materials that would be used in these areas during construction. Potential hazards include the routine use of hazardous materials (as defined by Title 22 of the California Code of Regulations, Division 4.5); natural gas accumulation in water conveyance tunnels; the inadvertent release of existing contaminants in soil and groundwater, or hazardous materials in existing infrastructure to be removed; disturbance of electrical transmission lines; and hazardous constituents present in RTM. Many of these physical and chemical hazards would occur in close proximity to the town of Hood during construction of the north Delta intakes. Additionally, the potential would exist for the construction of the water conveyance facilities to indirectly result in the release of hazardous materials through the disruption of existing road, rail, or river hazardous materials transport routes because construction would occur in the vicinity of three designated hazardous material transport routes, three active railroad corridors, and waterways with barge traffic and would require construction traffic that could disrupt these routes. For these reasons, this is considered a significant impact. However, with the implementation of the previously described environmental commitments and Mitigation Measures HAZ-1a and HAZ-1b, UT-6a and UT-6c (described in Chapter 20, *Public Services and Utilities*), and TRANS-1a (described in Chapter 19, *Transportation*), construction of the water conveyance facilities would not create a substantial hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or the upset/accidental release of these materials. The severity of this impact would be reduced with the implementation of these environmental commitments and mitigation measures by identifying and describing potential sources of hazardous materials so that releases can be avoided and materials can be properly handled; detailing practices to monitor pollutants and control erosion so that appropriate measures are taken; implementing onsite features to minimize the potential for hazardous materials to be released to the environment or surface waters; minimizing risk associated with the relocation of utility infrastructure; and coordinating the transport of hazardous materials to reduce the risk of spills. As such, this impact would be less than significant.

Mitigation Measure HAZ-1a: Perform Preconstruction Surveys, Including Soil and Groundwater Testing, at Known or Suspected Contaminated Areas within the Construction Footprint, and Remediate and/or Contain Contamination

Please refer to Mitigation Measure HAZ-1a under Impact HAZ-1 in the discussion of Alternative 1A.

Mitigation Measure HAZ-1b: Perform Pre-Demolition Surveys for Structures to Be Demolished within the Construction Footprint, Characterize Hazardous Materials and Dispose of Them in Accordance with Applicable Regulations

Please refer to Mitigation Measure HAZ-1b under Impact HAZ-1 in the discussion of Alternative 1A.

Mitigation Measure UT-6a: Verify Locations of Utility Infrastructure

Please see Mitigation Measure UT-6a under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure UT-6c: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Worker and Public Health and Safety

Please see Mitigation Measure UT-6c under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management Plan

Please see Mitigation Measure TRANS-1a under Impact TRANS-1 in the discussion of Alternative 1A in Chapter 19, *Transportation*.

Impact HAZ-2: Expose Sensitive Receptors Located within 0.25 Mile of a Construction Site to Hazardous Materials, Substances, or Waste during Construction of the Water Conveyance Facilities

NEPA Effects: There are no hospitals located within 0.25 mile of Alternative 1C. However, as shown in Figure 24-8, Lakewood Drive, Sycamore Drive, and Summer Lake Community Parks in Oakley, and Mokelumne High (Continuation) School in Courtland would be within 0.25 mile of the construction footprint for Alternative 1C. Sycamore Drive Park would be near a tunnel work area southwest of Summer Lake. The tunnel work area is required to support construction operations. Temporary offices, parking, tunnel segment storage, fan line storage, a maintenance shop, potable water treatment, and potentially other requirements. Because equipment would be maintained during construction in this area, which would potentially require the use of hazardous materials (e.g., fuels, grease, oil and solvents), and because heavy equipment would be operated in this area, there would be the potential for inadvertent leaks or spills of hazardous materials. Lakewood Drive and Summer Lake Community Parks are located within 0.25 mile of the construction footprint of a proposed temporary 12 kV transmission line west of Summer Lake, and Mokelumne High (Continuation) School would be near a proposed temporary 69 kV transmission line construction footprint. Construction of these temporary transmission lines would require the use of heavy equipment, such as dozers, cranes, and off-road work trucks, which would require the routine use of hazardous materials (e.g., fuels, solvents, oil and grease). Consequently, there would be the risk of accidental spills or equipment leaks of these types of hazardous materials, as discussed under Impact HAZ-1 under Alternative 1A. The most significant hazard risk from any power line is the danger of electrical contact between an object on the ground and an energized conductor. The closest park is approximately 0.2 mile from the construction footprint for the transmission line, and Mokelumne High (Continuation) School is across the Sacramento River from the proposed transmission line

construction area, therefore there would be no risk to these sensitive receptors with regard to transmission line construction.

Although there would be a risk of accidental spills of hazardous materials (e.g., fuels, solvents, paints) during the construction of the proposed temporary transmission lines, and generally where heavy construction equipment is operated, the quantities of hazardous materials likely to be used during construction activities are likely to be small. Were hazardous materials to be released inadvertently, spills or equipment leaks would be localized and minimal, and thus there would be no risk to anyone not in immediate proximity to these releases spills. Further, as discussed under Impact HAZ-1 for Alternative 1A, BMPs to minimize the potential for the accidental release of hazardous materials and to contain and remediate hazardous spills, as part of the SWPPPs, SPCCPs, and HMMPs, would be implemented, as described in Section 24.3.3.2 under "Routine Use of Hazardous Materials" for Alternative 1A, and as set forth in Appendix 3B, *Environmental Commitments.* Therefore, these sensitive receptors would not be exposed to hazardous materials, substances, or waste during construction of the water conveyance facilities. As such, there would be no adverse effect. Potential air quality effects on sensitive receptors are discussed in Chapter 22, *Air Quality and Greenhouse Gases.*

***CEQA Conclusion*:** Lakewood Drive, Sycamore Drive, and Summer Lake Community Parks in Oakley, and Mokelumne High (Continuation) School in Courtland, are within 0.25 mile of the construction footprint of Alternative 1C. Lakewood Drive and Summer Lake Community Parks and Mokelumne High (Continuation) School are near the construction footprint of proposed temporary 12 kV transmission lines. Construction of these lines would require the routine use of hazardous materials (e.g., fuels, solvents, oil and grease) because heavy machinery such as cranes, off-road work trucks, and dozers would be required. Consequently, there would be the risk of accidental spills and equipment leaks of these types of hazardous materials, as discussed under Impact HAZ-1 under Alternative 1A during construction. Sycamore Drive Park would be near a tunnel work area southwest of Summer Lake, as well as the proposed 12 kV transmission line. The tunnel work area is required to support construction operations. Temporary offices, parking, tunnel segment storage, fan line storage, a maintenance shop, potable water treatment, and potentially other requirements. Because equipment would be maintained in this area during construction, which would potentially require the use of hazardous materials (e.g., fuels, grease, oil and solvents), and because heavy equipment would be operated in this area, there would be the potential for inadvertent leaks or spills of hazardous materials. However, the potential to expose people at the parks or school to hazardous materials, substances or waste during construction of the water conveyance facilities due to these potential inadvertent releases would be negligible because spills and leaks would likely be small and localized. Further, BMPs to minimize the potential for the accidental release of hazardous materials and to contain and remediate hazardous spills, as part of the SWPPPs, SPCCPs, and HMMPs, would be implemented, as described in Section 24.3.3.2 under "Routine Use of Hazardous Materials" for Alternative 1A, and as set forth in Appendix 3B, *Environmental Commitments*. Therefore, these sensitive receptors would not be exposed to hazardous materials, substances, or waste during construction of the water conveyance facilities, and as such, this impact would be less than significant. No mitigation is required. Potential air quality effects on sensitive receptors are discussed in Chapter 22, *Air Quality and Greenhouse Gases.*

Impact HAZ-3: Potential to Conflict with a Known Hazardous Materials Site and, as a Result, Create a Significant Hazard to the Public or the Environment

NEPA Effects: There are no "Cortese List" sites within the construction footprint of the Alternative 1C water conveyance facilities. For those hazardous materials sites identified within the 0.5-mile radius (Table 24-5 and Figure 24-4), but which are not within the construction footprint, there would be no potential for the construction of the water conveyance facilities to disturb those sites such that there would be a re-release of hazardous materials that would create a hazard for the public or environment. However, as indicated in Table 24-5, Mill Site A, the site of a former large agricultural mill, would be located in a potential borrow and/or spoils area within the construction footprint of this alternative (Figure 24-4). This site was identified as a SOC in the 2009 ISA. However, there is no regulatory listing for this site, and no known hazardous materials occur at this site within the Alternative 1C construction footprint (Figure 24-4). Consequently, the potential for to conflict with hazards associated with this site is assumed to be minimal, and there would be no hazard to the public or environment as a result of hazardous materials release from this site during construction of the water conveyance facilities. Therefore, this effect would not be adverse. The potential for encountering unknown hazardous materials sites during the course of construction is discussed under Impact HAZ-1.

CEQA Conclusion: Mill Site A, the site of a former large agricultural mill, would be located in a potential borrow and/or spoils area within the construction footprint of this alternative. There is no regulatory listing for this site, and no known hazardous materials occur at this site within the Alternative 1C construction footprint. Therefore, the potential risk to release hazardous materials from this site during construction of the water conveyance facilities is negligible, and there would be no related significant hazard to the public or the environment. Therefore, this impact would be less than significant. No mitigation is required.

The potential for encountering unknown hazardous materials sites during the course of construction is discussed under Impact HAZ-1.

Impact HAZ-4: Result in a Safety Hazard Associated with an Airport or Private Airstrip within 2 Miles of the Water Conveyance Facilities Footprint for People Residing or Working in the Study Area during Construction of the Water Conveyance Facilities

NEPA Effects: Development around an airport, particularly in the approach and departure paths, can create obstructions in the airspace traversed by an approaching or departing aircraft. Additionally, certain land uses have the potential to create hazards to aircraft such as a distracting glare, smoke, steam, or invisible heat plumes. Safety impacts from aircraft accidents near airports are typically avoided by specifying the types of land uses allowed, and thereby limiting the number of people who would be exposed to the risk of an accident, and avoiding land uses that could create hazards to air traffic. Airspace protection primarily involves limitations on the height of objects on the ground near airports.

The nature of safety hazards related to air traffic would be similar to those described under Alternative 1A. However, under Alternative 1C, the water conveyance facilities would be within 2 miles of Delta Air Park, Funny Farm Airport, and Borges-Clarksburg Airport (all private air facilities), and Byron Airport, a public air facility (Figure 24-9). Delta Air Park, in Knightsen, is within two miles of a proposed RTM area; a proposed tunnel and tunnel work area; the main construction shaft for the tunnel; the proposed canal; a potential borrow and/or spoils area; and two proposed temporary transmission lines (12 kV and 69 kV). Similarly, Funny Farm Airport, in Brentwood, is

within 2 miles of several proposed water conveyance features and work areas—a borrow and/or spoils area; a proposed bridge and bridge work area; a railroad work area; a siphon work area; a proposed canal; a proposed siphon; and a proposed temporary 12 kV transmission line. The Borges-Clarksburg Airport is less than 1 mile from the proposed Intake 1, and proposed permanent 69 kV and temporary 12 kV transmission lines. Finally, Bryon Airport is within 2 miles of the construction footprints or areas of the following proposed water conveyance facilities features: fueling station; concrete batch plant; borrow and/or spoils area; bridge and bridge work area; siphon and siphon work area; Byron Tract Forebay; railroad work area; control structure and control structure work area; and a 12 kV temporary transmission line.

With the exception of the proposed transmission lines, bridge and bridge work area, intake and intake work area, construction of these features or work in these areas would not require the use of high-profile construction equipment. Because construction of the proposed transmission lines would potentially require high-profile equipment (e.g., cranes), the safety of air traffic arriving or departing from these airports could be compromised during construction of these features or work in these areas if it involves the movement of high-profile construction equipment.

Depending on the location and height of any high-profile construction equipment or structures relative to the Byron Airport, because it is a public air facility the BDCP may be subject to an OE/AAA to be performed by the FAA, as discussed under Impact HAZ-4 for Alternative 1A. Compliance with the results of the OE/AAA (14 CFR Part 77), would reduce the risk of adverse effects on air traffic safety due to water conveyance facility construction activities in the vicinity of this airport. The Caltrans' Division of Aeronautics would be informed in writing, as discussed under Impact HAZ-4 for Alternative 1A, and DWR would comply with Caltrans' recommendations regarding BMPs to avoid any adverse effects on air safety. Consequently, there would be no adverse effect on air safety during construction of the water conveyance facilities.

***CEQA Conclusion*:** The Delta Air Park, Funny Farm Airport, and Borges-Clarksburg Airport, all private airstrips, and Byron Airport, a public air facility, would be within 2 miles of the construction footprint of several proposed water conveyance facilities features, as well as associated work areas for Alternative 1C. The use of helicopters for stringing the proposed 230 kV transmission lines and of high-profile construction equipment (200 feet or taller), such as cranes, for installation of pipelines, placement of concrete fill in intake piles, and removal of cofferdam sheet piles, for example, and potentially pile drivers, such as would be used during the construction of the intakes, have the potential to result in safety hazards to aircraft during takeoff and landing if the equipment is operated too close to runways. DWR would coordinate with Caltrans' Division of Aeronautics prior to initiating construction and comply with its recommendations based their review, as well comply with the recommendations of the OE/AAA (for Byron Airport). These recommendations, which could include limitations necessary to minimize potential problems, such as the use of temporary construction equipment, supplemental notice requirements, and marking and lighting high-profile structures, would reduce the potential for impacts on air safety. Accordingly, this impact would be less than significant. No mitigation is required.

Impact HAZ-5: Expose People or Structures to a Substantial Risk of Property Loss, Personal Injury or Death Involving Wildland Fires, Including Where Wildlands Are adjacent to Urbanized Areas or Where Residences Are Intermixed with Wildlands, as a Result of Construction, and Operation and Maintenance of the Water Conveyance Facilities

NEPA Effects: Potential hazards related to wildland fire would be similar to those described under Impact HAZ-5 for Alternative 1A, but would carry the potential to affect different areas. As shown in Figure 24-10, no portion of Alternative 1C is located in or near an area designated as a High or Very High Fire Hazard Severity Zone. The northernmost and southernmost portions of Alternative 1C, where fueling stations and the Byron Tract Forebay, respectively, would be located are near Moderate Fire Hazard Severity Zones (Figure 24-10).

As described under Impact HAZ-5 for Alternative 1A and in Appendix 3B, *Environmental Commitments*, fire prevention and control measures would be implemented, as part of a FPCP, during construction, and operation and maintenance of the water conveyance facilities in full compliance with Cal-OSHA standards for fire safety and prevention. Because development and implementation of measures under the FPCP would help ensure that people or structures would not be subject to a substantial risk of loss, injury or death involving wildland fires and because the proposed water conveyance facilities would not be located in a High or Very High Fire Hazard Severity Zone, this effect would not be adverse.

CEQA Conclusion: Construction of Alternative 1C would involve the use of ignitable materials, including fuels and solvents, which would be used for the operation and maintenance of construction vehicles and other equipment. People or structures would not be subject to a substantial risk of loss, injury or death involving wildland fires during construction or operation and maintenance of the water conveyance facilities because the BDCP would comply with Cal-OSHA fire prevention and safety standards; DWR would implement standard fire prevention, safety and control measures, as part of a FPCP; and because the water conveyance facilities would not be located in a High or Very High Fire Hazard Severity Zone. Therefore, this impact would be less than significant. No mitigation is required.

Impact HAZ-6: Create a Substantial Hazard to the Public or the Environment through the Release of Hazardous Materials or by Other Means during Operation and Maintenance of the Water Conveyance Facilities

NEPA Effects: Potential hazards related to the long-term operation and maintenance of the water conveyance facilities would be similar to those described for Alternative 1A, particularly with respect to intakes and intake pumping plants. This alternative may require the transport, storage, and use of chemicals or hazardous waste materials, including fuel, oils, grease, solvents, and paints. Solids collected at solids lagoons and sediment dredged during intake maintenance may contain hazardous constituents (e.g., persistent pesticides, mercury, PCBs). The annual volume of solids is anticipated to be approximately 486,000 cubic feet (dry solids) under Alternative 1C. Differences in potential hazards relative to Alternative 1A could generally result from variations in operational and maintenance activities with respect to canals, culvert siphons, and control structures along this alignment. However, this alternative would also avoid potential hazards associated with operation and maintenance of longer tunnel segments and those relating to the intermediate forebay.

As previously discussed under Impact HAZ-2, Lakewood Drive Park, Sycamore Drive Park, Summer Lake Park, and Mokelumne High (Continuation) School would be within 0.25 mile of the construction footprint for Alternative 1C. Should hazardous materials be inadvertently released in

substantial quantities during routine operations and maintenance at the constructed facilities due to improper handling, there would be a potential risk to the public (including sensitive receptors). However, because the types of potentially hazardous materials used during routine operation and maintenance activities would be used in relatively small quantities, and because BMPs, as would be implemented in the SWPPPs, SPCCPs, and HMMPs (as detailed in Appendix 3B), would be in place to help prevent the inadvertent release of these materials and to contain and remediate spills should they occur, the risk to sensitive receptors within 0.25 mile of the construction footprint would be negligible. In addition, under Mitigation Measure HAZ-6, solids from the solids lagoons, which could contain hazardous constituents such as persistent pesticides and mercury, would be sampled and characterized to evaluate disposal options, and disposed of accordingly at an appropriate, licensed facility. To ensure that potentially contaminated sediment from maintenance dredging activities at the intakes would not adversely affect soil, groundwater or surface water, a SAP would be implemented prior to any dredging activities, as described under Impact HAZ-1 for this alternative. All sediment would be characterized chemically prior to reuse to ensure that reuse of this material would not result in a hazard to the public or the environment. Therefore, no adverse effects on sensitive receptors as a result of hazards or hazardous materials are anticipated.

The locations of public airports and private airstrips with respect to the west alignment are provided in Figure 24-9. Delta Air Park, Byron Airport, and the Borges-Clarksburg Airport would be within 2 miles of the Alternative 1C construction footprint. With the exception of power transmission lines supplying power to pumps, surge towers, and other equipment used for operation and maintenance of the BDCP, water conveyance facilities operations and maintenance are not anticipated to require high-profile equipment (i.e., equipment with a vertical reach of 200 feet or more), the use of which near an airport runway could result in an adverse effect to aircraft. DWR would adhere to all applicable FAA regulations (14 CFR Part 77) and would coordinate with Caltrans' Division of Aeronautics prior to any maintenance activities requiring high-profile maintenance equipment and comply with any air safety recommendations Caltrans may have to ensure that there is no conflict with or adverse effect on air traffic. Compliance with these recommendations, which could include limitations necessary to minimize potential problems, such as the use of temporary construction equipment, supplemental notice requirements, and marking and lighting high-profile structures would reduce the potential for impacts on air safety.

***CEQA Conclusion*:** The accidental release of hazardous materials to the environment during operation and maintenance of the water conveyance facilities and the potential interference with air safety through the use of high-profile equipment for maintenance of proposed transmission lines could have impacts on the public and environment. However, implementation of the BMPs and other activities required by SWPPPs, HMMPs, SPCCPs, SAPs, and Mitigation Measure HAZ-6, which would ensure that dewatered solids are not reintroduced to the environment and are properly disposed of, as well as adherence to all applicable FAA regulations (14 CFR Part 77) and coordination/compliance with Caltrans' Division of Aeronautics when performing work with high-profile equipment within 2 miles of an airport, which would include implementation of recommendations to provide supplemental notice and/or equip high-profile structures with marking and lighting, would ensure that operation and maintenance of the water conveyance facilities would not create a substantial hazard to the public, environment or air traffic safety. Therefore, this impact would be less than significant.

Mitigation Measure HAZ-6: Test Dewatered Solids from Solids Lagoons Prior to Reuse and/or Disposal

Please refer to Mitigation Measure HAZ-6 under Impact HAZ-6 in the discussion of Alternative 1A.

Impact HAZ-7: Create a Substantial Hazard to the Public or the Environment through the Release of Hazardous Materials or by Other Means as a Result of Implementing Conservation Measures CM2-CM11, CM13, CM14, CM16 and CM18

NEPA Effects: The potential for construction, operation, and maintenance activities associated with the implementation of conservation measures (CM2–CM11, CM13, CM 14, CM16, and CM18) to create hazards to workers, the public, and the environment would be similar to those described under Alternative 1A. Potential variation from Alternative 1A would be anticipated to be minor but could result from the selection of different areas for restoration activities based on the location of the physical water conveyance features associated with each alternative.

Hazardous materials associated with the operation of construction equipment (e.g., fuels, lubricants) could be inadvertently released into the environment in the course of the materials' routine transport, use, or disposal. Similarly, construction activities could encounter known or unknown hazardous materials sites located on or in the vicinity of construction sites, creating the potential for hazardous materials disturbance and release. Other activities, including the intentional demolition of existing structures (e.g., buildings) and reuse of spoil, dredged material and/or RTM, would also present the potential to generate hazards or release hazardous materials. However, prior to the reuse of spoils, dredged material or RTM, these materials would undergo chemical characterization, as described in Appendix 3B, *Environmental Commitments*, to ensure that they are not creating a hazard to the public and environment.

Further, other potential hazards that could result from implementing conservation measures include the possible release of hazardous substances in proximity to sensitive receptors; damage or disruption of existing infrastructure such that hazardous conditions were created; the accidental release of hazardous substances during operation and maintenance and/or transport (e.g., herbicides for nonnative vegetation control); the release, in the short-term, of pesticides from former agricultural lands as a result of wetland and floodplain restoration; the potential for safety hazards related to construction in the vicinity of an airport; and the potential for wildfire hazards in the vicinity of construction sites.

These potential effects, were they to occur, would be adverse. However, as discussed under Impact HAZ-7 for Alternative 1A, with implementation of Mitigation Measures HAZ-1a, HAZ-1b, UT-6a, UT-6c, TRANS-1a, and environmental commitments (discussed previously for Impacts HAZ-1 through HAZ-6, and in detail in Appendix 3B, *Environmental Commitments*), the potential for adverse effects would be reduced. Additionally, the proposed conservation measures would be designed to avoid sensitive receptors and would minimize, to the extent feasible, the need to acquire or traverse areas where the presence of hazardous materials is suspected or has been verified. Consequently, this effect would not be adverse.

Potential safety hazards to air traffic related to the potential for increased bird-aircraft strikes as a result of creating or enhancing wildlife habitat are discussed under Impact HAZ-8.

CEQA Conclusion: The potential for impacts related to the release and exposure of workers and the public to hazardous substances or conditions during construction, operation, and maintenance of CM2–CM11, CM13, CM14, CM16, and CM18 could be significant. Conservation component implementation would involve extensive use of heavy equipment during construction, and/or the use and/or transport of hazardous chemicals during operations and maintenance (e.g., herbicides for nonnative vegetation control). Hazardous materials could be inadvertently released, exposing construction workers or the public to hazards. Construction of restoration projects on or near existing agricultural and industrial land may result in a conflict or exposure to known hazardous materials, and the use of high-profile equipment in close proximity to airport runways could result in hazards to air traffic. However in addition to implementation of SWPPPs, HMMPs, SPCCPs, SAPs, and a FPCP, Mitigation Measures HAZ-1a, HAZ-1b, UT-6a, UT-6c, and TRANS-1a would be implemented, all of which would ensure that these potential impacts are less than significant.

Mitigation Measure HAZ-1a: Perform Preconstruction Surveys, Including Soil and Groundwater Testing, at Known or Suspected Contaminated Areas within the Construction Footprint, and Remediate and/or Contain Contamination

Please refer to Mitigation Measure HAZ-1a under Impact HAZ-1 in the discussion of Alternative 1A.

Mitigation Measure HAZ-1b: Perform Pre-Demolition Surveys for Structures to Be Demolished within the Construction Footprint, Characterize Hazardous Materials and Dispose of Them in Accordance with Applicable Regulations

Please refer to Mitigation Measure HAZ-1b under Impact HAZ-1 in the discussion of Alternative 1A.

Mitigation Measure UT-6a: Verify Locations of Utility Infrastructure

Please see Mitigation Measure UT-6a under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure UT-6c: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Worker and Public Health and Safety

Please see Mitigation Measure UT-6c under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management Plan

Please see Mitigation Measure TRANS-1a under Impact TRANS-1 in the discussion of Alternative 1A in Chapter 19, *Transportation*.

Impact HAZ-8: Increased Risk of Bird–Aircraft Strikes during Implementation of Conservation Measures That Create or Improve Wildlife Habitat

NEPA Effects: The potential for implementation of conservation measures that create or improve wildlife habitat (CM2–CM11) to create hazards air and public safety through increased bird-aircraft strikes would be similar to the potential effects described under Alternative 1A. Potential variation from Alternative 1A would be anticipated to be minor but could result from the selection of different

areas for restoration activities based on the location of the physical water conveyance features associated with each alternative. Such variation may result greater or less opportunity for bird-aircraft strikes depending on the location's proximity to airport flight zones. The following airports, because they are in relatively close proximity (within 2 miles) to the ROAs and/or conservation zones could potentially be affected: Travis Air Force Base; Rio Vista Municipal Airport; Funny Farm Airport; Sacramento International Airport, and Byron Airport.

The effect of increased bird-aircraft strikes during implementation of CM2–CM11 would be adverse because it could potentially result in an air and public safety hazard. Mitigation Measure HAZ-8 would reduce the severity of this effect through the development and implementation of measures to reduce, minimize and/or avoid wildlife hazards on air safety. However, this effect is would remain adverse.

CEQA Conclusion: Implementation of CM2–CM11, because they would create or improve wildlife habitat, could potentially attract waterfowl and other birds to areas in proximity to existing airport flight zones, and thereby result in an increase in bird-aircraft strikes, which could result in significant impacts on public safety. The following airports, because they are in relatively close proximity (within 2 miles) to the ROAs and/or conservation zones could potentially be affected: Travis Air Force Base; Rio Vista Municipal Airport; Funny Farm Airport; Sacramento International Airport, and Byron Airport. Mitigation Measure HAZ-8 could reduce the severity of this impact through the ultimate development and implementation of measures to reduce, minimize and/or avoid wildlife hazards on air safety, but not to a less-than-significant level. As such, the impact is significant and unavoidable.

Mitigation Measure HAZ-8: Consult with Individual Airports and USFWS, and Relevant Regulatory Agencies

Please refer to Mitigation Measure HAZ-8 under Impact HAZ-8 in the discussion of Alternative 1A. This mitigation measure will ensure that the potential for increased bird – aircraft strikes as a result of implementing CM2–CM11 in the vicinity of airports are minimized to the greatest extent possible.

24.3.3.5 Alternative 2A—Dual Conveyance with Pipeline/Tunnel and Five Intakes (15,000 cfs; Operational Scenario B)

Impact HAZ-1: Create a Substantial Hazard to the Public or the Environment through the Release of Hazardous Materials or by Other Means during Construction of the Water Conveyance Facilities

NEPA Effects: Hazards to the public or the environment through the routine transport, use, or disposal of hazardous materials during construction of the water conveyance facilities for Alterative 2A would be similar to those described under Alternative 1A. However, under Alternative 2A, Intakes 6 and 7 could be constructed instead of Intakes 4 and 5, as would an operable barrier at the head of Old River. Despite the potentially different locations for selected intakes and the construction of an operable barrier, it is anticipated that effects associated with the transport and use of fuels for this alternative would be similar to those described for Alternative 1A. Construction of an operable barrier at the head of Old River would create a marginally higher potential for hazards. Construction of this barrier would add an additional location where hazardous materials could potentially be released during storage, use, or transport. Additionally, land-based and in-water

construction activities, including dredging, associated with this barrier could potentially encounter and release contaminated soil, groundwater, or sediment.

Further, similar to Alternative 1A, tunnel construction activities would carry the potential to encounter gases that could enter the tunnels and accumulate to flammable or explosive concentrations. Hazardous constituents associated with RTM are not anticipated; however, the possibility exists for RTM and decanted water to pose a hazard to the construction workers, the public, or the environment. Additionally, stored bulk quantities of hazardous materials that have been released to soils and groundwater could be rereleased during construction, also posing a potential hazard. Water conveyance facilities construction would also require in-channel dredging (e.g., for construction of the operable barrier at the head of Old River), which would result in the resuspension of potentially contaminated sediments. Existing infrastructure, including oil and gas wells, also have the potential to release hazardous materials, as would the transport of hazardous materials during construction. If intakes 4 and 5 are selected for this alternative, approximately 204 permanent structures would be removed or relocated within the Alternative 2A water conveyance facility footprint. This includes approximately 59 residential buildings. Other structures affected would consist primarily of storage or agricultural support facilities (120), as well as 15 recreational facilities (e.g., pools and docks), and 10 other types of structures (e.g., power/utility structures, bridges, and other types of infrastructure). As described under Alternative 1A, these structures may contain hazardous materials that would require proper handling and disposal, if demolition is necessary. Under this alternative, selection of Intakes 6 and 7 instead of Intakes 4 and 5 would be anticipated to disrupt approximately 18 additional structures, including approximately 70 residential structures, 15 recreational structures (e.g., pools and docks), as well as 124 storage/support buildings. As described for Impact HAZ-1 under Alternative 1A, Mitigation Measure HAZ-1b would be implemented by DWR to ensure that there are no adverse effects related to structure demolition due to hazardous materials.

As described for Alternative 1A under Impact HAZ-1, in general, the transportation of hazardous materials via trucks, trains and ships poses potential risks associated with the accidental release of these materials to the environment. Rerouting vehicular traffic carrying hazardous materials during construction of the water conveyance facilities could increase the risk of accidental release due to inferior road quality or lack of driver familiarity with the modified routes. Hazardous materials transportation routes are presented in Figure 24-2 and in Table 24-4. Routes anticipated to be affected during construction of the water conveyance facilities are described in Chapter 19, *Transportation*. It is not anticipated that traffic on any of these highways will need to be rerouted. Under Mitigation Measure TRANS-1a, a site-specific construction traffic management plan, taking into account hazardous materials transportation, would be prepared and implemented prior to initiation of construction of water conveyance facilities (as described under Impact HAZ-1 for Alternative 1A), and would be expected to reduce potential circulation effects and avoiding rerouting of traffic as practicable. The plan would reduce the potential for effects on hazardous materials transportation routes in the study area. Barges supporting water conveyance facilities construction may also transport hazardous materials such as fuels and lubricants or other chemicals. The potential exists for accidental release of hazardous materials from BDCP-related barges. To avoid effects on the environment related to this issue, BMPs would be implemented as part of a Barge Operations Plan (as discussed under Impact HAZ-1 for Alternative 1A and in Appendix 3B, *Environmental Commitments*) that would reduce the potential for accidental releases of hazardous materials during transport and transfer. Finally, under this alternative, the water conveyance would cross under the existing BNSF/Amtrak San Joaquin line between Bacon Island

and Woodward Island; however, the effect of this crossing would likely be minimal because the proposed conveyance would traverse the railroad in a deep bore tunnel (see Chapter 19 for discussion). Further, the UPRR runs proximate to the construction area of the proposed Byron Forebay; however, construction is unlikely to disrupt rail service because much of this line has not been in service recently. Any potential effects on rail traffic during construction would be reduced with implementation of Mitigation Measure TRANS-1a, which would include stipulations to coordinate with rail providers to develop alternative interim transportation modes (e.g., trucks or buses) that could be used to provide freight and/or passenger service during any longer term railroad closures and daily construction time windows during which construction would be restricted or rail operations would need to be suspended for any activity within railroad rights of way. This would minimize the potential risk of release of hazardous materials being transported via these rails.

As noted in the discussion of Impact HAZ-1 under Alternative 1A, project design will minimize, to the extent feasible, the need to acquire or traverse areas where the presence of hazardous materials is suspected or has been verified. Further, environmental commitments would be implemented, including SWPPPs, SPCCPs, SAPs, and HMMPs; a Barge Operations Plan; and chemical characterization of RTM prior to reuse (e.g., RTM in levee reinforcement) or discharge. Together, these commitments would reduce these potential hazards associated with water conveyance facilities construction. Additionally, the implementation of Mitigation Measures HAZ-1a and HAZ-1b, UT-6a and UT-6c (described in Chapter 20, *Public Services and Utilities*), and TRANS-1a (described in Chapter 19, *Transportation*) would further reduce the potential severity of this impact. As such, construction of the water conveyance facilities would not create a substantial hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or the upset/accidental release of these materials. Therefore, this impact would not be adverse.

CEQA Conclusion: Similar to Alternative 1A, construction of the water conveyance facilities under Alternative 2A presents the potential for a direct significant impact on construction personnel, the public and/or the environment associated with a variety of physical and chemical hazardous conditions because of the intensity of construction activities at the north Delta intakes, forebays and conveyance pipelines and tunnels and the hazardous materials that would be needed in these areas during construction. Potential hazards include the routine use of hazardous materials (as defined by Title 22 of the California Code of Regulations, Division 4.5); natural gas accumulation in water conveyance tunnels; the inadvertent release of existing contaminants in soil, sediment, and groundwater, or hazardous materials in existing infrastructure to be removed; disturbance of electrical transmission lines; and hazardous constituents present in RTM. Many of these physical and chemical hazardous conditions would occur in close proximity to the towns of Hood and Courtland during construction of the north Delta intakes and the intermediate forebay. Potential differences between this alternative and Alternative 1A would result from hazards associated with site-specific contaminants or hazardous materials present in the soil, river sediment, or infrastructure that would be disturbed with construction of Intakes 6 and 7, if these locations were chosen instead of Intakes 4 and 5, and the operable barrier at the head of Old River. Additionally, the potential would exist for the construction of the water conveyance facilities to indirectly result in the release of hazardous materials through the disruption of existing road, rail, or river hazardous materials transport routes because construction would occur in the vicinity of three hazardous material transport routes, three railroad corridors, and waterways with barge traffic and would require construction traffic that could disrupt these routes. For these reasons, this is considered a significant impact. However, with the implementation of the previously described environmental

commitments (e.g., SWPPPs, HMMPs, SPCCPs, SAPs, and a Barge Operations Plan) and Mitigation Measures HAZ-1a and HAZ-1b, UT-6a and UT-6c (described in Chapter 20, *Public Services and Utilities)*, and TRANS-1a (described in Chapter 19, *Transportation*), construction of the water conveyance facilities would not create a substantial hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or the upset/accidental release of these materials. As such, these impacts would be less than significant.

Mitigation Measure HAZ-1a: Perform Preconstruction Surveys, Including Soil and Groundwater Testing, at Known or Suspected Contaminated Areas within the Construction Footprint, and Remediate and/or Contain Contamination

Please refer to Mitigation Measure HAZ-1a under Impact HAZ-1 in the discussion of Alternative 1A.

Mitigation Measure HAZ-1b: Perform Pre-Demolition Surveys for Structures to Be Demolished within the Construction Footprint, Characterize Hazardous Materials and Dispose of Them in Accordance with Applicable Regulations

Please refer to Mitigation Measure HAZ-1b under Impact HAZ-1 in the discussion of Alternative 1A.

Mitigation Measure UT-6a: Verify Locations of Utility Infrastructure

Please see Mitigation Measure UT-6a under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure UT-6c: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Worker and Public Health and Safety

Please see Mitigation Measure UT-6c under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management Plan

Please see Mitigation Measure TRANS-1a under Impact TRANS-1 in the discussion of Alternative 1A in Chapter 19, *Transportation*.

Impact HAZ-2: Expose Sensitive Receptors Located within 0.25 Mile of a Construction Site to Hazardous Materials, Substances, or Waste during Construction of the Water Conveyance Facilities

NEPA Effects: An adverse effect may occur if a construction work site is located within 0.25 mile of an existing or proposed school, or other sensitive receptor, and releases hazardous materials that pose a health hazard. However, no schools, parks or hospitals are located within 0.25 mile of Alternative 2A. However, under this alternative, an operable barrier would be constructed at the head of Old River near the Mossdale Village area of Lathrop, adjacent to land designated for public use and which could include future schools or parks. If a school or park were built prior to the completion of construction of the operable barrier, sensitive receptors would be in close proximity to BDCP construction activities, creating the potential for an adverse effect. However, because there is currently no school or park within 0.25 mile of the operable barrier site, and because no school or

park is currently proposed within 0.25 mile of that site, there would be no adverse effect on sensitive receptors at this site.

Therefore, no sensitive receptors would be exposed to hazardous materials, substances, or waste during construction of the water conveyance facilities under Alternative 2A. As such, there would be no effect. Potential air quality effects on sensitive receptors are discussed in Chapter 22, *Air Quality and Greenhouse Gases.*

CEQA Conclusio*n*: There are no schools, parks or hospitals located within 0.25 mile of the Alternative 2A water conveyance facilities alignment. Where the construction of a school or park is to be completed near the Mossdale Village area of Lathrop prior to the completion of construction of the operable barrier, sensitive receptors would be in close proximity to construction activities under this alternative, creating a potential significant impact. However, because no school or park is currently proposed within 0.25 mile of the proposed operable barrier site, there would be no impact. Therefore, for this alternative there would be no impact due to exposure of sensitive receptors to hazardous materials, substances or waste during construction of the water conveyance facilities. No mitigation is required. Potential air quality effects on sensitive receptors are discussed in Chapter 22, *Air Quality and Greenhouse Gases.*

Where the construction of a school or park is to be completed prior to the completion of construction of the operable barrier, sensitive receptors would be in close proximity to construction activities under this alternative, creating a potential significant impact. However, because no school or park is currently proposed within 0.25 mile of the proposed operable barrier site, there would be no impact.

Impact HAZ-3: Potential to Conflict with a Known Hazardous Materials Site and, as a Result, Create a Significant Hazard to the Public or the Environment

NEPA Effects: Effects related to sites on the "Cortese List" and SOCs would be similar to those described under Alternative 1A. Potential differences under this alternative would arise from any hazardous materials sites encountered in the construction of Intakes 6 and 7, if these locations were chosen, as well as the potential construction of an operable barrier at the head of Old River; however, there are no known hazardous materials sites in the construction footprint for those intakes nor in the footprint for the pipelines to those intakes.

There are no "Cortese List" sites or known SOCs within the construction footprint of Alternative 2A (Table 24-5 and Figure 24-4), and therefore there would be no conflict pertaining to a known hazardous materials site during construction of the water conveyance facilities and thus, no related hazard to the public or the environment. For those hazardous materials sites identified within the 0.5-mile radius, but which are not within the construction footprint (Table 24-5), there would be no potential for the construction of the water conveyance facilities to disturb those sites such that there would be a re-release of hazardous materials that would create a hazard for the public or environment. Therefore, there would be no effect. The potential for encountering unknown hazardous materials sites during the course of construction is discussed under Impact HAZ-1.

CEQA Conclusion: Because there are no known SOCs within the construction footprint of the water conveyance facility under this alternative, there would be no conflict with known hazardous materials sites during construction of the water conveyance facilities, and therefore, no related hazard to the public or the environment. As such, there would be no impact. No mitigation is

required. The potential for encountering unknown hazardous materials sites during the course of construction is discussed under Impact HAZ-1.

Impact HAZ-4: Result in a Safety Hazard Associated with an Airport or Private Airstrip within 2 Miles of the Water Conveyance Facilities Footprint for People Residing or Working in the Study Area during Construction of the Water Conveyance Facilities

NEPA Effects: Development around an airport, particularly in the approach and departure paths, can create obstructions in the airspace traversed by an approaching or departing aircraft. Additionally, certain land uses have the potential to create hazards to aircraft such as a distracting glare, smoke, steam, or invisible heat plumes. Safety impacts from aircraft accidents near airports are typically avoided by specifying the types of land uses allowed, and thereby limiting the number of people who would be exposed to the risk of an accident, and avoiding land uses that could create hazards to air traffic. Airspace protection primarily involves limitations on the height of objects on the ground near airports.

Safety hazards to aircraft posed by high-profile (200 feet or taller) construction equipment such, as tall cranes and pile drivers, or structures (e.g., proposed transmission lines and towers) would be similar as those described under Alternative 1A. Potential differences would result from different locations for equipment if Intakes 6 and 7 were constructed, as well as the potential for additional equipment necessary for the construction of an operable barrier. The Borges-Clarksburg, Walnut Grove, and Spezia Airports (all private air facilities), and the Byron Airport (a public air facility) are located within 2 miles of the construction footprint of this alternative.

DWR would adhere to all applicable FAA regulations prior to and during construction of water conveyance facilities, including complying with the recommendations of an OE/AAA (14 CFR Part 77) for Byron Airport. Additionally, as previously discussed, construction of a state building or enclosure within 2 miles of any airport is subject to review by Caltrans' Division of Aeronautics prior to initiating construction to help ensure that adverse effects on air safety are avoided. DWR would adhere to Caltrans' recommendations based on its review in order to avoid any adverse effects on air safety. Therefore, there would be no adverse effects on air traffic safety related to construction of the water conveyance facilities under this alternative.

CEQA Conclusion: The use of helicopters for stringing the proposed 230 kV transmission lines and of high-profile construction equipment, such as cranes, for installation of pipelines, and potentially pile drivers, such as would be used during the construction of the intakes, have the potential to result in safety hazards to aircraft during takeoff and landing if the equipment is operated too close to runways. Three private airports (Borges-Clarksburg, Spezia, and Walnut Grove Airports) and one public airport (Byron Airport) are located within 2 miles of the construction footprint of Alternative 2A. DWR would coordinate with Caltrans' Division of Aeronautics prior to initiating construction and comply with its recommendations based on site investigation(s), as well as comply with the recommendations of the OE/AAA (for Byron Airport). Compliance with these recommendations, which could include limitations necessary to minimize potential problems, such as the use of temporary construction equipment, supplemental notice requirements, and marking and lighting high-profile structures would reduce the potential for impacts on air safety. Accordingly, this impact would be less than significant. No mitigation is required.

Impact HAZ-5: Expose People or Structures to a Substantial Risk of Property Loss, Personal Injury or Death Involving Wildland Fires, Including Where Wildlands Are adjacent to

Urbanized Areas or Where Residences Are Intermixed with Wildlands, as a Result of Construction, and Operation and Maintenance of the Water Conveyance Facilities

NEPA Effects: Hazards related to wildland fires would be similar to those described under Alternative 1A. The northernmost and southernmost extent of this conveyance alignment would be adjacent to areas designated Moderate Fire Hazard Severity Zones.

As described under Alternative 1A and in Appendix 3B, *Environmental Commitments*, precautions would be taken to prevent wildland fires during construction, and operation and maintenance of the water conveyance facilities in full compliance with Cal-OSHA standards for fire safety and prevention. Additionally, DWR would develop and implement a FPCP in coordination with federal, state, and local agencies. Implementation of these would help ensure that people or structures would not be subject to a significant risk of loss, injury or death involving wildland fires. Consequently, this effect would not be adverse.

CEQA Conclusion: People or structures would not be subject to a significant risk of loss, injury or death involving wildland fires during construction or operation and maintenance of the proposed water conveyance facilities because the BDCP would comply with Cal-OSHA fire prevention and safety standards; implement standard fire safety and prevention measures, as part of a FPCP (Appendix 3B, *Environmental Commitments*); and because the water conveyance facilities would not be located in a High or Very High Fire Hazard Severity Zone. Therefore, this impact would be less than significant. No mitigation is required.

Impact HAZ-6: Create a Substantial Hazard to the Public or the Environment through the Release of Hazardous Materials or by Other Means during Operation and Maintenance of the Water Conveyance Facilities

NEPA Effects: Potential hazards related to the long-term operation and maintenance of the water conveyance facilities would be similar to those described for Alternative 1A. Under this alternative, however, Intakes 6 and 7 may be selected instead of Intakes 4 and 5, presenting potential variation in the location of possible hazards. Additionally, operation and maintenance activities associated with an operable barrier could expand the potential for hazards. This alternative may require the transport, storage, and use of chemicals or hazardous waste materials, including fuel, oils, grease, solvents, and paints. Solids collected at solids lagoons and sediment dredged during periodic maintenance dredging at the operable barrier at the head of Old River and at intakes may contain potentially hazardous constituents (e.g., persistent pesticides, mercury, PCBs). To ensure that potentially contaminated sediment from maintenance dredging activities at the intakes would not adversely affect soil, groundwater or surface water, a SAP would be implemented prior to any dredging activities, as described under Impact HAZ-1 for this alternative. All sediment would be characterized chemically prior to reuse to ensure that reuse of this material would not result in a hazard to the public or the environment.

The Borges-Clarksburg, Walnut Grove, and Spezia Airports (private air facilities), and the Byron Airport (a public air facility) are located within 2 miles of the Alternative 2A construction footprint (Figure 24-9 and Table 24-6). With the exception of power transmission lines supplying power to pumps, surge towers, and other equipment used for water conveyance facilities operation and maintenance, water conveyance facilities operations and maintenance are not anticipated to require high-profile equipment, the use of which near an airport runway could result in an adverse effect on aircraft. DWR would adhere to all applicable FAA regulations (14 CFR Part 77) and would coordinate with Caltrans' Division of Aeronautics prior to any maintenance activities requiring high-

profile maintenance equipment. DWR would comply with any recommendation Caltrans may have to ensure that there is no conflict with or adverse effect on air traffic. Compliance with these recommendations, which could include limitations necessary to minimize potential problems, such as the use of temporary construction equipment, supplemental notice requirements, and marking and lighting high-profile structures would reduce the potential for impacts on air safety.

There are no sensitive receptors (i.e., schools, hospitals and parks) located within 0.25 mile of Alternative 2A.

Because the types of potentially hazardous materials used during routine operation and maintenance activities would be used in relatively small quantities, and because BMPs, as would be implemented in the SWPPPs, SPCCPs, and HMMPs (as detailed in Appendix 3B), would be in place to help prevent the inadvertent release of these materials and to contain and remediate spills should they occur, the risk to the public and environment would be negligible. Further, under Mitigation Measure HAZ-6, solids from the solids lagoons would be sampled and characterized to evaluate disposal options, and disposed of accordingly at an appropriate, licensed facility. These measures would ensure that this effect is not adverse.

***CEQA Conclusion*:** The accidental release of hazardous materials to the environment during operation and maintenance of the water conveyance facilities and the potential interference with air safety through the use of high-profile equipment for maintenance of proposed transmission lines could have impacts on the public and environment. However, implementation of the BMPs and other activities required by SWPPPs, HMMPs, SPCCPs, SAPs, and Mitigation Measure HAZ-6, which would ensure that dewatered solids are not reintroduced to the environment and are properly disposed of, as well as adherence to all applicable FAA regulations (14 CFR Part 77) and coordination/compliance with Caltrans' Division of Aeronautics when performing work with high-profile equipment within 2 miles of an airport, which would include implementation of recommendations to provide supplemental notice and/or equip high-profile structures with marking and lighting, would ensure that operation and maintenance of the water conveyance facilities would not create a substantial hazard to the public, environment or air traffic safety. Therefore, this impact would be less than significant.

Mitigation Measure HAZ-6: Test Dewatered Solids from Solids Lagoons Prior to Reuse and/or Disposal

Please refer to Mitigation Measure HAZ-6 under Impact HAZ-6 in the discussion of Alternative 1A.

Impact HAZ-7: Create a Substantial Hazard to the Public or the Environment through the Release of Hazardous Materials or by Other Means as a Result of Implementing Conservation Measures CM2-CM11, CM13, CM14, CM16 and CM18

NEPA Effects: The potential for construction, operation, and maintenance activities associated with the implementation of conservation measures (CM2–CM11, CM13, CM 14, CM16, and CM18) to create hazards to workers, the public, and the environment would be similar to those described under Alternative 1A. Hazardous materials associated with the operation of construction equipment could be inadvertently released into the environment in the course of the materials' routine transport, use, or disposal. Releases could also occur as a result of accidental circumstances during operation and maintenance activities, such as the application of herbicides to control nonnative vegetation. Similarly, construction activities could encounter known or unknown hazardous

materials sites located on or in the vicinity of construction sites, creating the potential for their disturbance and release. Other activities, including the intentional demolition of existing structures (e.g., buildings) and reuse of spoil, dredged material and/or RTM, would also present the potential to generate hazards or release hazardous materials. However, prior to the reuse of spoils, dredged material or RTM, these materials would undergo chemical characterization, as described in Appendix 3B, *Environmental Commitments*, to ensure that they are not creating a hazard to the public and environment. Further, other potential hazards that could result from implementing conservation measures include the possible release of hazardous substances in proximity to sensitive receptors; the release, in the short-term, of pesticides from former agricultural lands as a result of wetland and floodplain restoration; the potential for safety hazards related to construction in the vicinity of an airport; damage or disruption of existing infrastructure such that hazardous conditions were created; and the potential for wildfire hazards in the vicinity of construction sites.

These potential effects, were they to occur, would be adverse. However, as discussed under Impact HAZ-7 for Alternative 1A, with implementation of Mitigation Measures HAZ-1a, HAZ-1b, UT-6a, UT-6c, and TRANS-1a, and environmental commitments (discussed previously for Impacts HAZ-1 through HAZ-6, and in detail in Appendix 3B, *Environmental Commitments*), the potential for adverse effects would be reduced. Additionally, the proposed conservation measures would be designed to avoid sensitive receptors and would minimize, to the extent feasible, the need to acquire or traverse areas where the presence of hazardous materials is suspected or has been verified. Therefore, this effect would not be adverse.

CEQA Conclusion*:* The potential for impacts related to the release and exposure of workers and the public to hazardous substances or conditions during construction, operation, and maintenance of CM2–CM11, CM13, CM14, CM16, and CM18 could be significant. Conservation component implementation would involve extensive use of heavy equipment during construction, and/or the use and/or transport of hazardous chemicals during operations and maintenance (e.g., herbicides for nonnative vegetation control). These chemicals could be inadvertently released and could expose construction workers or the public to hazards. Construction of restoration projects on or near existing agricultural and industrial land may result in a conflict or exposure to known hazardous materials, and the use of high-profile equipment in close proximity to airport runways could result in hazards to air traffic. However in addition to implementation of SWPPPs, HMMPs, SPCCPs, SAPs, and a FPCP, Mitigation Measures HAZ-1a, HAZ-1b, UT-6a, UT-6c, and TRANS-1a would be implemented, all of which would ensure that these potential impacts are less than significant.

Mitigation Measure HAZ-1a: Perform Preconstruction Surveys, Including Soil and Groundwater Testing, at Known or Suspected Contaminated Areas within the Construction Footprint, and Remediate and/or Contain Contamination

Please refer to Mitigation Measure HAZ-1a under Impact HAZ-1 in the discussion of Alternative 1A.

Mitigation Measure HAZ-1b: Perform Pre-Demolition Surveys for Structures to Be Demolished within the Construction Footprint, Characterize Hazardous Materials and Dispose of Them in Accordance with Applicable Regulations

Please refer to Mitigation Measure HAZ-1b under Impact HAZ-1 in the discussion of Alternative 1A.

Mitigation Measure UT-6a: Verify Locations of Utility Infrastructure

Please see Mitigation Measure UT-6a under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure UT-6c: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Worker and Public Health and Safety

Please see Mitigation Measure UT-6c under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management Plan

Please see Mitigation Measure TRANS-1a under Impact TRANS-1 in the discussion of Alternative 1A in Chapter 19, *Transportation*.

Impact HAZ-8: Increased Risk of Bird–Aircraft Strikes during Implementation of Conservation Measures That Create or Improve Wildlife Habitat

NEPA Effects: The potential for implementation of conservation measures that create or improve wildlife habitat (CM2–CM11) to create hazards air and public safety through increased bird-aircraft strikes would be similar to the potential effects described under Alternative 1A. Potential variation from Alternative 1A would be anticipated to be minor but could result from the selection of different areas for restoration activities based on the location of the physical water conveyance features associated with each alternative. Such variation may result greater or less opportunity for bird-aircraft strikes depending on the location's proximity to airport flight zones. The following airports, because they are in relatively close proximity (within 2 miles) to the ROAs and/or conservation zones could potentially be affected: Travis Air Force Base; Rio Vista Municipal Airport; Funny Farm Airport; Sacramento International Airport, and Byron Airport.

The effect of increased bird-aircraft strikes during implementation of CM2–CM11 would be adverse because it could potentially result in an air and public safety hazard. Mitigation Measure HAZ-8 would reduce the severity of this effect through the development and implementation of measures to reduce, minimize and/or avoid wildlife hazards on air safety. However, this effect is would remain adverse.

CEQA Conclusion: Implementation of CM2–CM11, because they would create or improve wildlife habitat, could potentially attract waterfowl and other birds to areas in proximity to existing airport flight zones, and thereby result in an increase in bird-aircraft strikes, which could result in significant impacts on public safety. The following airports, because they are in relatively close proximity (within 2 miles) to the ROAs and/or conservation zones could potentially be affected: Travis Air Force Base; Rio Vista Municipal Airport; Funny Farm Airport; Sacramento International Airport, and Byron Airport. Mitigation Measure HAZ-8 could reduce the severity of this impact through the ultimate development and implementation of measures to reduce, minimize and/or avoid wildlife hazards on air safety, but not to a less-than-significant level. As such, the impact is significant and unavoidable.

Mitigation Measure HAZ-8: Consult with Individual Airports and USFWS, and Relevant Regulatory Agencies

Please refer to Mitigation Measure HAZ-8 under Impact HAZ-8 in the discussion of Alternative 1A. This mitigation measure will ensure that the potential for increased bird – aircraft strikes as a result of implementing CM2–CM11 in the vicinity of airports are minimized to the greatest extent possible.

24.3.3.6 Alternative 2B—Dual Conveyance with East Alignment and Five Intakes (15,000 cfs; Operational Scenario B)

Impact HAZ-1: Create a Substantial Hazard to the Public or the Environment through the Release of Hazardous Materials or by Other Means during Construction of the Water Conveyance Facilities

NEPA Effects: Hazards to the public or the environment through the routine transport, use, or disposal of hazardous materials during construction of the water conveyance facilities for Alterative 2B would be similar to those described under Alternative 1B. However, under Alternative 2B, Intakes 6 and 7 could be constructed instead of Intakes 4 and 5, as would an operable barrier at the head of Old River. Although, despite the potentially different locations for selected intakes and the construction of an operable barrier, it is anticipated that effects associated with the transport and use of fuels for this alternative would be similar to those described for Alternative 1B. Construction of an operable barrier at the head of Old River would create a marginally higher potential for hazards. Construction of this barrier would add an additional location where hazardous materials could potentially be released during storage, use, or transport. Additionally, land-based and in-water construction activities, including dredging, associated with this barrier could potentially encounter and release contaminated soil, groundwater, or sediment.

As described in Chapter 3, *Description of Alternatives*, during construction of Alternative 2B six locations would be designated as temporary fueling stations. Each fueling station would occupy two acres and each would be located adjacent to a concrete batch plant. Fueling station locations are shown in Figure 24-7. Fueling stations would be established in currently rural areas with two at the intakes on the northern end of the conveyance alignment, three along the length of the canal alignment and one fueling station would be near the pumping facilities on the southern end. Bulk fuel would be stored at fueling stations and potentially pose the risk of vehicle fueling spills and leakage from above-ground storage tanks at fueling stations.

Potential hazards associated with natural gas accumulation in tunnels, existing contaminants in soil, river sediment or groundwater, hazardous constituents present in RTM, infrastructure containing hazardous materials, and the disruption of existing hazardous materials transport routes would be similar to those described under Alternative 1B. However, the locations and extent of these hazards would be different than Alternative 1B due to the potentially different intake locations and the construction of an operable barrier at the head of Old River. Under this alternative, there are 9 overhead power/electrical transmission lines and three natural gas pipelines and five petroleum product pipelines (Table 24-3), 57 inactive and four active oil or gas wells within the proposed Alternative 2B water conveyance construction footprint (California Department of Water Resources 2010b:13-1). Further, water conveyance facilities construction under this alternative would also require in-channel dredging (e.g., for construction of the operable barrier at the head of Old River), which would result in the resuspension of potentially contaminated sediments.

If intakes 4 and 5 were constructed, approximately 409 structures would be removed or relocated under Alternative 2B. This would include approximately 109 residential structures; 22 recreational structures; 257 storage and agricultural support structures; and 21 other types of structures (e.g., power/utility structures, bridges, and other types of infrastructure). If Intakes 6 and 7 were constructed instead of Intakes 4 and 5, approximately 22 additional structures would be disrupted including approximately 121 residential structures; 23 recreational structures; 262 storage/support structures; and 25 other types of structures. These structures may contain hazardous materials that would require proper handling and disposal, if demolition is necessary. As described for Impact HAZ-1 under Alternative 1A, Mitigation Measure HAZ-1b would be implemented by DWR to ensure that there are no adverse effects related to structure demolition due to hazardous materials.

Risks associated with the transportation of hazardous materials via truck, trains, and ships would be similar to those described under Alternative 1A but would occur in different areas. Hazardous materials transportation routes that would be used under this alternative are presented in Figure 24-2 and in Table 24-4. Routes anticipated to be affected during construction of the water conveyance facilities are listed in Chapter 19, *Transportation*. Under Mitigation Measure TRANS-1a, a site-specific construction traffic management plan, taking into account hazardous materials transportation, would be prepared and implemented prior to initiation of water conveyance facilities construction. This mitigation measure would reduce the potential for effects on hazardous materials transportation routes in the study area. Barges supporting water conveyance facilities construction may also transport hazardous materials such as fuels and lubricants or other chemicals. The potential exists for accidental release of hazardous materials from BDCP-related barges. To avoid effects on the environment related to this issue, BMPs would be implemented as part of a Barge Operations Plan (as discussed under Impact HAZ-1 for Alternative 1A and in Appendix 3B, *Environmental Commitments*) that would reduce the potential for accidental releases of hazardous materials during transport and transfer. Further, the Alternative 2B water conveyance facilities alignment would cross one railroad ROW at the BNSF railroad in San Joaquin County near Holt. A culvert siphon would be built at this rail crossing, reducing potential hazards associated with rail transportation. Two segments of a UPRR line would intersect with bridge facilities constructed east of the intake facilities and other construction work areas would be immediately adjacent to an out-of-service UPRR Tracy Subdivision branch line near the California Aqueduct at the southern end of the water conveyance facilities. Because these crossings are in construction work areas, train operations along the BNSF Railway/Amtrak San Joaquin Line could be affected. Additional conflicts could arise if the out-of-service UPRR line were reopened. Mitigation Measure TRANS-1a would include stipulations to coordinate with rail providers to develop alternative interim transportation modes (e.g., trucks or buses) that could be used to provide freight and/or passenger service during any longer term railroad closures and daily construction time windows during which construction would be restricted or rail operations would need to be suspended for any activity within railroad rights of way. This would minimize the potential risk of release of hazardous materials being transported via these rails.

As noted in the discussion of Impact HAZ-1 under Alternative 1A, project design will minimize, to the extent feasible, the need to acquire or traverse areas where the presence of hazardous materials is suspected or has been verified. Further, environmental commitments would be implemented, including SWPPPs, SPCCPs, SAPs, and HMMPs; a Barge Operations Plan; and chemical characterization of RTM prior to reuse (e.g., RTM in levee reinforcement) or discharge. Together, the environmental commitments would reduce these potential hazards associated with water conveyance facilities construction. Additionally, the implementation of Mitigation Measures HAZ-1a

and HAZ-1b, UT-6a and UT-6c (described in Chapter 20, *Public Services and Utilities*), and TRANS-1a (described in Chapter 19, *Transportation*) would further reduce the potential severity of this impact. As such, construction of the water conveyance facilities would not create a substantial hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or the upset/accidental release of these materials. Therefore, this effect would not be adverse.

CEQA Conclusion: During construction of the water conveyance facilities, the potential would exist for direct significant impacts on construction personnel, the public and/or the environment associated with the routine use of hazardous materials; natural gas accumulation in water conveyance tunnels; the inadvertent release of existing contaminants in soil, sediment, and groundwater, or hazardous materials in existing infrastructure to be removed; disturbance of electrical transmission lines; and potentially hazardous constituents present in RTM. Additionally, the potential would exist for the construction of the water conveyance facilities to indirectly result in the release of hazardous materials through the disruption of existing road, rail, or river hazardous materials transport routes, which, were this to occur, would be considered a significant impact. Potential differences between this alternative and Alternative 1B would result from hazards associated with site-specific contaminants or hazardous materials present in the soil, river sediment, or infrastructure that would be disturbed with construction of Intakes 6 and 7, if these locations were chosen instead of Intakes 4 and 5, and the operable barrier at the head of Old River. However, with the implementation of the previously described environmental commitments (for Impact HAZ-1 under Alternative 1A) and Mitigation Measures HAZ-1a and HAZ-1b, UT-6a and UT-6c (described in Chapter 20, *Public Services and Utilities*), and TRANS-1a (described in Chapter 19, *Transportation*), construction of the water conveyance facilities would not create a substantial hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or the upset/accidental release of these materials. As such, these impacts would be less than significant.

Mitigation Measure HAZ-1a: Perform Preconstruction Surveys, Including Soil and Groundwater Testing, at Known or Suspected Contaminated Areas within the Construction Footprint, and Remediate and/or Contain Contamination

Please refer to Mitigation Measure HAZ-1a under Impact HAZ-1 in the discussion of Alternative 1A.

Mitigation Measure HAZ-1b: Perform Pre-Demolition Surveys for Structures to Be Demolished within the Construction Footprint, Characterize Hazardous Materials and Dispose of Them in Accordance with Applicable Regulations

Please refer to Mitigation Measure HAZ-1b under Impact HAZ-1 in the discussion of Alternative 1A.

Mitigation Measure UT-6a: Verify Locations of Utility Infrastructure

Please see Mitigation Measure UT-6a under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure UT-6c: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Worker and Public Health and Safety

Please see Mitigation Measure UT-6c under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management Plan

Please see Mitigation Measure TRANS-1a under Impact TRANS-1 in the discussion of Alternative 1A in Chapter 19, *Transportation*.

Impact HAZ-2: Expose Sensitive Receptors Located within 0.25 Mile of a Construction Site to Hazardous Materials, Substances, or Waste during Construction of the Water Conveyance Facilities

NEPA Effects: There are no schools or hospitals within 0.25 mile of Alternative 2B. However, Buckley Cove Park and Nelson Park, both in Stockton, are within 0.25 mile of the construction footprint of Alternative 2B. Buckley Cove Park is located west of a proposed borrow and/or spoils area across the Stockton Deep Water Ship Channel, and Nelson Park is just north of a proposed temporary 69 kV transmission line (Figure 24-8). Because large construction equipment, such as dump trucks, diggers, back hoes, and potentially cranes (for the installation of the temporary transmission line) could be operating in these areas, there could be the potential for oil leakage from these vehicles. However, if this were to occur, it would be localized and minimal. Furthermore, environmental commitment measures (Appendix 3B, *Environmental Commitments)* implemented as part of the HMMPs, SPCCPs, and SWPPPs, including positioning all stationary equipment over drip pans, and immediately cleaning up spills and leaks and disposing of properly, will ensure that equipment leaks are contained and remediated. Therefore, people at these parks would not be at risk or adversely affected by exposure to hazardous materials, substances, or waste during construction of the water conveyance facilities.

In addition, under this alternative, an operable barrier would be constructed at the head of Old River near the Mossdale Village area of Lathrop, adjacent to land designated for public use and which could include future schools or parks. If a school or park were built prior to the completion of construction of the operable barrier, sensitive receptors would be in close proximity to BDCP construction activities, creating the potential for an adverse effect. However, no school or park is currently proposed within 0.25 mile of the proposed operable barrier site; therefore, there would be no adverse effect.

Potential air quality effects on sensitive receptors are discussed in Chapter 22, *Air Quality and Greenhouse Gases*, and potential EMF effects on sensitive receptors are discussed in Chapter 25, *Public Health.*

***CEQA Conclusion*:** Buckley Cove and Nelson Parks in Stockton are within 0.25 mile of the construction footprint of Alternative 2B. Buckley Cove Park is west of a proposed borrow and/or spoils area across the Stockton Deep Water Ship Channel, and Nelson Park is just north of a proposed temporary 69 kV transmission line. Large construction equipment, such as dump trucks, diggers, back hoes, and potentially cranes would be operating in these areas during construction and there would be the potential for these vehicles to leak oil. However, if this were to occur, the leaks would be localized and minimal. Furthermore, environmental commitment measures (Appendix 3B,

Environmental Commitments) implemented as part of the HMMPs, SPCCPs, and SWPPPs, including positioning all stationary equipment over drip pans, and immediately cleaning up spills and leaks and disposing of properly, will ensure that equipment leaks are contained and remediated. Therefore, people at these parks would not be at risk or affected. If the construction of a school or park were completed on land designated for public use near the Mossdale Village area of Lathrop prior to the completion of construction of the operable barrier, sensitive receptors would be in close proximity to BDCP construction activities, creating a potential significant impact. However, no school or park is currently proposed within 0.25 mile of the proposed operable barrier site, therefore there would be no impact. Because people at Buckley Cove and Nelson Parks would not be exposed to hazardous materials, substances, or waste during construction of the water conveyance facilities, this impact would be less than significant. Potential air quality effects on sensitive receptors are discussed in Chapter 22, *Air Quality and Greenhouse Gases*, and potential EMF effects on sensitive receptors are discussed in Chapter 25, *Public Health.*

Impact HAZ-3: Potential to Conflict with a Known Hazardous Materials Site and, as a Result, Create a Significant Hazard to the Public or the Environment

NEPA Effects: Effects related to sites on the Cortese List and SOCs would be the same as those described under Alternative 1B. The Sarale Farms site (a "Cortese List" site) and Kinder Morgan Energy pipeline access station site are located within the construction footprints for proposed temporary 69kV transmission lines (Table 24-5 and Figure 24-4). At the Sarale Farms site a 10,000-gallon petroleum UST was removed in 1992. Soil and groundwater contain petroleum products in excess of cleanup standards. The San Joaquin County Environmental Health Department issued a letter in December 2008 requiring continued monitoring of groundwater and additional assessment of groundwater for petroleum.

Because construction of the temporary transmission line would not entail deep excavation or require dewatering activities, no conflict with existing hazards at this site are anticipated. However, if dewatering and/or deep excavation were required in this area contaminated groundwater could be drawn up and/or contaminated soils may be disturbed, respectively. Improper disposal of contaminated excavated soils or groundwater would have the potential to adversely affect the environment. To avoid this potential adverse effect, Mitigation Measure HAZ-1a would be implemented to ensure that any known or suspected soil and/or groundwater contamination is not re-released. Further, design of the transmission line, including pole placement, would avoid the Kinder Morgan Energy and Sarale Farms site to the extent practicable to ensure there were no adverse hazardous effects associated with construction on or in close proximity to these sites.

For those hazardous materials sites identified within the 0.5-mile radius but which are not within the construction footprint, there would be no potential for the construction of the water conveyance facilities to disturb those sites such that there would be a re-release of hazardous materials that would create a hazard for the public or environment. Therefore, this effect would not be adverse. The potential for encountering unknown hazardous materials sites during the course of construction is discussed under Impact HAZ-1, above.

***CEQA Conclusion*:** The re-release of hazardous materials during construction activities (dewatering and/or deep excavation) at the Sarale Farms site or the Kinder Morgan Energy pipeline access station site within the construction footprints for proposed temporary 69 kV transmission lines could result in a significant impact if contaminated groundwater and/or soils were rereleased. However, a significant impact on the environment would be avoided with implementation of

Mitigation Measure HAZ-1a. Further, project design would minimize, to the extent feasible, the need traverse areas where the presence of hazardous materials is suspected or has been verified, or where interference with existing infrastructure might result in hazards. As a result, there would be a less than significant impact on the public and/or environment because construction of the water conveyance facilities near the Kinder Morgan Energy pipeline access station site and the Sarale Farms site would not result in hazardous materials releases from these sites. The potential for encountering other unknown hazardous materials sites during the course of construction is discussed under Impact HAZ-1, above.

Mitigation Measure HAZ-1a: Perform Preconstruction Surveys, Including Soil and Groundwater Testing, at Known or Suspected Contaminated Areas within the Construction Footprint, and Remediate and/or Contain Contamination

Please refer to Mitigation Measure HAZ-1a under Impact HAZ-1 in the discussion of Alternative 1A.

Impact HAZ-4: Result in a Safety Hazard Associated with an Airport or Private Airstrip within 2 Miles of the Water Conveyance Facilities Footprint for People Residing or Working in the Study Area during Construction of the Water Conveyance Facilities

NEPA Effects: Development around an airport, particularly in the approach and departure paths, can create obstructions in the airspace traversed by an approaching or departing aircraft. Additionally, certain land uses have the potential to create hazards to aircraft such as a distracting glare, smoke, steam, or invisible heat plumes. Safety impacts from aircraft accidents near airports are typically avoided by specifying the types of land uses allowed, and thereby limiting the number of people who would be exposed to the risk of an accident, and avoiding land uses that could create hazards to air traffic. Airspace protection primarily involves limitations on the height of objects on the ground near airports.

Effects under this alternative with regard to creating safety hazards to air traffic as a result of constructing the water conveyance facilities would be the same as under Alternative 1B. As shown in Figure 24-9, the Borges-Clarksburg Airport, Byron Airport, and Lost Isle Seaplane Base are within 2 miles of the Alternative 2B water conveyance facilities. The Borges-Clarksburg Airport is a private, special use airport with a land use plan. The Lost Isle Seaplane Base and Byron Airport are public use airports and are subject to FAA regulations regarding construction within 10,000 feet. Construction of a state building or enclosure within 2 miles of any airport is subject to review of Caltrans' Division of Aeronautics for safety and noise effects. In the event final locations for any state building or enclosure within 2 miles of any airport, Caltrans' Division of Aeronautics would require written notification and a review would be performed. Caltrans would provide recommendations, based on this review, to ensure that there were no impacts related to the construction of the water conveyance facilities on air safety. DWR would comply with these recommendations to avoid adverse effects. Additionally, depending on the location and height of any high-profile construction equipment, the Lost Isle Seaplane Base and Byron Airport, because they are public air facilities, may be subject to an OE/AAA to be performed by the FAA. BDCP compliance with the results of the OE/AAA would reduce the risk of adverse effects to air traffic safety in the vicinity of these airports. Therefore, there would be no adverse effect on air safety.

CEQA Conclusion: The use of helicopters for stringing the proposed 230 kV transmission lines and of high-profile construction equipment (200 feet or taller), such as cranes, for installation of

pipelines, placement of concrete fill in intake piles, and removal of cofferdam sheet piles, for example, and potentially pile drivers, such as would be used during the construction of the intakes, have the potential to result in safety hazards to aircraft during takeoff and landing if the equipment is operated too close to runways. Two public airports (Lost Isle Seaplane Base and Byron Airport) and one private airport (Borges-Clarksburg Airport) are located within 2 miles of the construction footprint of Alternative 2B. DWR would coordinate with Caltrans' Division of Aeronautics prior to initiating construction and would comply with its recommendations based on its investigation(s), as well comply with the recommendations of the OE/AAA (for Byron Airport and the Lost Isle Seaplane Base). Compliance with these recommendations, which could include limitations necessary to minimize potential problems, such as the use of temporary construction equipment, supplemental notice requirements, and marking and lighting high-profile structures would reduce the potential for impacts on air safety. Accordingly, this impact would be less than significant. No mitigation is required.

Impact HAZ-5: Expose People or Structures to a Substantial Risk of Property Loss, Personal Injury or Death Involving Wildland Fires, Including Where Wildlands Are adjacent to Urbanized Areas or Where Residences Are Intermixed with Wildlands, as a Result of Construction, and Operation and Maintenance of the Water Conveyance Facilities

NEPA Effects: Hazards related to wildland fires would be similar to those described under Alternative 1B. The northernmost and southernmost extent of this conveyance alignment would be adjacent to zones of moderate fire hazard severity (Figure 24-10).

As described under Alternative 1A and in Appendix 3B, *Environmental Commitments*, precautions would be taken to prevent wildland fires during construction, and operation and maintenance of the water conveyance facilities in full compliance with Cal-OSHA standards for fire safety and prevention. Additionally, DWR would develop and implement a FPCP in coordination with federal, state, and local agencies. Implementation of these would help ensure that people or structures would not be subject to a significant risk of loss, injury or death involving wildland fires. Therefore, this effect would not be adverse.

CEQA Conclusion: People or structures would not be subject to a significant risk of loss, injury or death involving wildland fires during construction or operation and maintenance of the water conveyance facilities under Alternative 2B because the BDCP would comply with Cal-OSHA fire prevention and safety standards; implement standard fire safety and prevention measures, as part of a FPCP (Appendix 3B, *Environmental Commitments*); and because the water conveyance facilities would not be located in a High or Very High Fire Hazard Severity Zone. Therefore, this impact would be less than significant. No mitigation is required.

Impact HAZ-6: Create a Substantial Hazard to the Public or the Environment through the Release of Hazardous Materials or by Other Means during Operation and Maintenance of the Water Conveyance Facilities

NEPA Effects: Potential hazards related to the long-term operation and maintenance of the water conveyance facilities would be similar to those described for Alternative 1B, particularly with respect to intakes and intake pumping plants. This alternative may require the transport, storage, and use of chemicals or hazardous waste materials including fuel, oils, grease, solvents, and paints. Solids collected at the solids lagoons, and sediment dredged during periodic maintenance dredging at the intakes and operable barrier at the head of Old River, may contain hazardous constituents

(e.g., persistent pesticides, mercury, PCBs). To ensure that potentially contaminated sediment from maintenance dredging activities at the intakes would not adversely affect soil, groundwater or surface water, a SAP would be implemented prior to any dredging activities, as described under Impact HAZ-1 for this alternative. All sediment would be characterized chemically prior to reuse to ensure that reuse of this material would not result in a hazard to the public or the environment.

Differences from Alternative 1B could result from potential hazards related to operational and maintenance activities associated with the operable barrier at the head of Old River. For example, sediment removal activities associated with barrier maintenance could encounter and release contaminated sediments. This facility would require the use of oils and other hazardous materials.

As noted above, the Borges-Clarksburg Airport, Byron Airport, and Lost Isle Seaplane Base are within 2 miles of the Alternative 2B water conveyance facilities. With the exception of the proposed power transmission lines and towers, water conveyance facilities are not anticipated to require the use of high-profile equipment during operations and maintenance. Depending on the location and height of any equipment necessary for transmission line maintenance, the Lost Isle Seaplane Base and Byron Airport, because they are public air facilities, would be subject to an OE/AAA to be performed by the FAA. DWR would comply with recommendations based on the results of an OE/AAA (14 CFR 77). Additionally, DWR would coordinate with Caltrans' Division of Aeronautics prior to any maintenance activities requiring high-profile maintenance equipment and comply with any recommendation Caltrans may have regarding air safety. Compliance with these recommendations, which could include limitations necessary to minimize potential problems, such as the use of temporary construction equipment, supplemental notice requirements, and marking and lighting high-profile structures would reduce the potential for impacts on air safety. Therefore, no adverse effects on air safety are anticipated due to operation and maintenance of the water conveyance facilities.

Potential releases of hazardous materials associated with operation and maintenance of the water conveyance facilities under this alternative could result in an adverse effect on workers, the public (including sensitive receptors within 0.25 mile of the construction footprint), and the environment. As indicated above under Impact HAZ-2 for this alternative, Buckley Cove and Nelson Parks are within 0.25 mile of a proposed borrow/spoils area and a proposed temporary 69 kV transmission line, respectively. Because the proposed 69 kV transmission line is temporary, it would be removed following completion of the water conveyance facilities, and therefore no maintenance activities would occur in this area. No maintenance activities would take place in the borrow/spoils area, per se; however, should the spoils be used at some later time, heavy construction equipment such as dump trucks and excavators would be needed to move the spoils. Consequently, there could be the potential for oil leakage from these vehicles. Although there would be a risk of accidental spills of hazardous materials (e.g., fuels, solvents, paints) during facility operation and maintenance, the quantities of hazardous materials likely to be used during routine operations and maintenance are likely to be small, and were they to be released inadvertently, they would be localized. Further, BMPs to minimize the potential for the accidental release of hazardous materials and to contain and remediate hazardous spills, as part of the SWPPPs, SPCCPs, and HMMPs, would be implemented as set forth in Appendix 3B, *Environmental Commitments*. Therefore, it is unlikely that park visitors would be at risk or adversely affected.

In addition, under Mitigation Measure HAZ-6, solids from the solids lagoons, which could contain hazardous constituents such as persistent pesticides and mercury, would be sampled and characterized to evaluate disposal options, and disposed of accordingly at an appropriate, licensed

facility in order to avoid adverse effects on the environment from potential contamination. Accordingly, there would be no adverse effect.

***CEQA Conclusion*:** The accidental release of hazardous materials to the environment during operation and maintenance of the water conveyance facilities and the potential interference with air safety through the use of high-profile equipment for maintenance of proposed transmission lines could have impacts on the public and environment. However, implementation of the BMPs and other activities required by SWPPPs, HMMPs, SPCCPs, SAPs, and Mitigation Measure HAZ-6, which would ensure that dewatered solids are not reintroduced to the environment and are properly disposed of, as well as adherence to all applicable FAA regulations (14 CFR Part 77) and coordination/compliance with Caltrans' Division of Aeronautics when performing work with high-profile equipment within 2 miles of an airport, which would include implementation of recommendations to provide supplemental notice and/or equip high-profile structures with marking and lighting, would ensure that operation and maintenance of the water conveyance facilities would not create a substantial hazard to the public, environment or air traffic safety. Therefore, this impact would be less than significant.

Mitigation Measure HAZ-6: Test Dewatered Solids from Solids Lagoons Prior to Reuse and/or Disposal

Please refer to Mitigation Measure HAZ-6 under Impact HAZ-6 in the discussion of Alternative 1A.

Impact HAZ-7: Create a Substantial Hazard to the Public or the Environment through the Release of Hazardous Materials or by Other Means as a Result of Implementing Conservation Measures CM2-CM11, CM13, CM14, CM16 and CM18

NEPA Effects: The potential for construction, operation, and maintenance activities associated with the implementation of conservation measures (CM2–CM11, CM13, CM 14, CM16, and CM18) to create hazards to workers, the public, and the environment under Alternative 2B would be similar to those described under Alternative 1A. Potential variation from Alternative 1A would be anticipated to be minor but could result from the selection of different areas for restoration activities based on the location of the physical water conveyance features associated with each alternative.

Hazardous materials associated with the operation of construction equipment could be released into the environment in the course of the materials' routine transport, use, or disposal. Releases could also occur as a result of accidental circumstances. Similarly, construction activities could encounter known or unknown hazardous materials sites located on or in the vicinity of construction sites, creating the potential for hazardous materials disturbance and release. Other activities, including the intentional demolition of existing structures (e.g., buildings) and reuse of spoil, dredged material and/or RTM, would also present the potential to generate hazards or release hazardous materials. However, prior to the reuse of spoils, dredged material or RTM, these materials would undergo chemical characterization, as described in Appendix 3B, *Environmental Commitments*, to ensure that they are not creating a hazard to the public and environment.

Further, other potential hazards that could result from implementing conservation measures include the possible release of hazardous substances in proximity to sensitive receptors; the accidental release of hazardous substances during operation and maintenance and/or transport (e.g., herbicides for nonnative vegetation control); the release, in the short-term, of pesticides from former agricultural lands as a result of wetland and floodplain restoration; damage or disruption of

existing infrastructure such that hazardous conditions were created; the potential for safety hazards related to construction in the vicinity of an airport; and the potential for wildfire hazards in the vicinity of construction sites. These potential effects would be adverse. However, as discussed for Impact HAZ-7 under Alternative 1A, with implementation of Mitigation Measures HAZ-1a, HAZ-1b, UT-6a, UT-6c, TRANS-1a, and environmental commitments (discussed previously for Impacts HAZ-1 through HAZ-6, and in detail in Appendix 3B, *Environmental Commitments*), the potential for adverse effects would be reduced. Additionally, the proposed conservation measures would be designed to avoid sensitive receptors and would minimize, to the extent feasible, the need to acquire or traverse areas where the presence of hazardous materials is suspected or has been verified. Consequently, this effect would not be adverse.

Potential safety hazards to air traffic related to the potential for increased bird-aircraft strikes as a result of creating or enhancing wildlife habitat are discussed under Impact HAZ-8.

CEQA Conclusion: The potential for impacts related to the release of, and exposure of workers and the public to, hazardous substances or conditions during construction, operation, and maintenance of CM2–CM11, CM13, CM14, CM16, and CM18 could be significant. Conservation component implementation would involve extensive use of heavy equipment during construction, and/or the use and/or transport of hazardous chemicals during operations and maintenance (e.g., herbicides for nonnative vegetation control). Hazardous materials could be inadvertently released, exposing construction workers or the public to hazards. Construction of restoration projects on or near existing agricultural and industrial land may result in a conflict or exposure to known hazardous materials, and the use of high-profile equipment in close proximity to airport runways could result in hazards to air traffic. However in addition to implementation of SWPPPs, HMMPs, SPCCPs, SAPs, and a FPCP, Mitigation Measures HAZ-1a, HAZ-1b, UT-6a, UT-6c, and TRANS-1a would be implemented, all of which would ensure that these potential impacts are less than significant.

Mitigation Measure HAZ-1a: Perform Preconstruction Surveys, Including Soil and Groundwater Testing, at Known or Suspected Contaminated Areas within the Construction Footprint, and Remediate and/or Contain Contamination

Please refer to Mitigation Measure HAZ-1a under Impact HAZ-1 in the discussion of Alternative 1A.

Mitigation Measure HAZ-1b: Perform Pre-Demolition Surveys for Structures to Be Demolished within the Construction Footprint, Characterize Hazardous Materials and Dispose of Them in Accordance with Applicable Regulations

Please refer to Mitigation Measure HAZ-1b under Impact HAZ-1 in the discussion of Alternative 1A.

Mitigation Measure UT-6a: Verify Locations of Utility Infrastructure

Please see Mitigation Measure UT-6a under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure UT-6c: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Worker and Public Health and Safety

Please see Mitigation Measure UT-6c under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management Plan

Please see Mitigation Measure TRANS-1a under Impact TRANS-1 in the discussion of Alternative 1A in Chapter 19, *Transportation*.

Impact HAZ-8: Increased Risk of Bird–Aircraft Strikes during Implementation of Conservation Measures That Create or Improve Wildlife Habitat

NEPA Effects: The potential for implementation of conservation measures that create or improve wildlife habitat (CM2–CM11) to create hazards air and public safety through increased bird-aircraft strikes would be similar to the potential effects described under Alternative 1A. Potential variation from Alternative 1A would be anticipated to be minor but could result from the selection of different areas for restoration activities based on the location of the physical water conveyance features associated with each alternative. Such variation may result greater or less opportunity for bird-aircraft strikes depending on the location's proximity to airport flight zones. The following airports, because they are in relatively close proximity (within 2 miles) to the ROAs and/or conservation zones could potentially be affected: Travis Air Force Base; Rio Vista Municipal Airport; Funny Farm Airport; Sacramento International Airport, and Byron Airport.

The effect of increased bird-aircraft strikes during implementation of CM2–CM11 would be adverse because it could potentially result in an air and public safety hazard. Mitigation Measure HAZ-8 would reduce the severity of this effect through the development and implementation of measures to reduce, minimize and/or avoid wildlife hazards on air safety. However, this effect is would remain adverse.

CEQA Conclusion: Implementation of CM2–CM11, because they would create or improve wildlife habitat, could potentially attract waterfowl and other birds to areas in proximity to existing airport flight zones, and thereby result in an increase in bird-aircraft strikes, which could result in significant impacts on public safety. The following airports, because they are in relatively close proximity (within 2 miles) to the ROAs and/or conservation zones could potentially be affected: Travis Air Force Base; Rio Vista Municipal Airport; Funny Farm Airport; Sacramento International Airport, and Byron Airport. Mitigation Measure HAZ-8 could reduce the severity of this impact through the ultimate development and implementation of measures to reduce, minimize and/or avoid wildlife hazards on air safety, but not to a less-than-significant level. As such, the impact is significant and unavoidable.

Mitigation Measure HAZ-8: Consult with Individual Airports and USFWS, and Relevant Regulatory Agencies

Please refer to Mitigation Measure HAZ-8 under Impact HAZ-8 in the discussion of Alternative 1A. This mitigation measure will ensure that the potential for increased bird – aircraft strikes as a result of implementing CM2–CM11 in the vicinity of airports are minimized to the greatest extent possible.

24.3.3.7 Alternative 2C—Dual Conveyance with West Alignment and Intakes W1–W5 (15,000 cfs; Operational Scenario B)

Impact HAZ-1: Create a Substantial Hazard to the Public or the Environment through the Release of Hazardous Materials or by Other Means during Construction of the Water Conveyance Facilities

NEPA Effects: For the duration of construction of the water conveyance facilities, potential hazards associated with the routine use of hazardous materials; natural gas accumulation in tunnels; existing contaminants in soil, groundwater, or sediment; hazardous constituents present in RTM; infrastructure containing hazardous materials; and the routine transport of hazardous materials would be similar to those described under Alternative 1C. However, construction of an operable barrier at the head of Old River would create a marginally higher potential for hazards. Construction of this barrier would add an additional location where hazardous materials could potentially be released during storage, use, or transport. Additionally, land-based and in-water construction activities—including dredging—associated with this barrier could potentially encounter and release contaminated soil, groundwater, or sediment. Conflicts with existing infrastructure containing hazardous materials or unknown sites of hazardous materials also pose potential risks. The number of existing structures requiring demolition or relocation under this alternative would be the same as under Alternative 1C. As described for Impact HAZ-1 under Alternative 1A, Mitigation Measure HAZ-1b would be implemented by the BDCP proponents to ensure that there are no adverse effects related to structure demolition due to hazardous materials.

Construction of the water conveyance facilities would create the potential for direct adverse effects on construction personnel, the public and/or the environment associated with the routine use of hazardous materials; natural gas accumulation in water conveyance tunnels; the inadvertent release of existing contaminants in soil, groundwater, and sediment, or hazardous materials in existing infrastructure to be removed; disturbance of electrical transmission lines; and hazardous constituents present in RTM. Additionally, there is the potential for the construction of the water conveyance facilities to indirectly result in the release of hazardous materials through the disruption of existing road, rail, and/or river hazardous materials transport routes, which, were this to occur, would be considered an adverse effect.

As noted in the discussion of Impact HAZ-1 under Alternative 1A project design will minimize, to the extent feasible, the need to acquire or traverse areas where the presence of hazardous materials is suspected or has been verified. Further, environmental commitments would be implemented, including SWPPPs, SPCCPs, SAPs, and HMMPs; a Barge Operations Plan; and chemical characterization of RTM prior to reuse (e.g., RTM in levee reinforcement) or discharge. Together, the environmental commitments would reduce these potential hazards associated with water conveyance facilities construction. Additionally, the implementation of Mitigation Measures HAZ-1a and HAZ-1b, UT-6a and UT-6c (described in Chapter 20, *Public Services and Utilities*), and TRANS-1a (described in Chapter 19, *Transportation*) would further reduce the potential severity of this impact. As such, construction of the water conveyance facilities would not create a substantial hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or the upset/accidental release of these materials. Thus, this effect would not be adverse.

CEQA Conclusion: During construction of the water conveyance facilities, the potential would exist for direct significant impacts on construction personnel, the public and/or the environment associated with the routine use of hazardous materials; natural gas accumulation in water

conveyance tunnels; the inadvertent release of existing contaminants in soil, sediment, and groundwater, or hazardous materials in existing infrastructure to be removed; disturbance of electrical transmission lines; and hazardous constituents present in RTM. Additionally, the potential would exist for the construction of the water conveyance facilities to indirectly result in the release of hazardous materials through the disruption of existing road, rail, or river hazardous materials transport routes, which, were this to occur, would be considered a significant impact. However, with the implementation of the previously described environmental commitments and Mitigation Measures HAZ-1a and HAZ-1b, UT-6a and UT-6c (described in Chapter 20, *Public Services and Utilities*), and TRANS-1a (described in Chapter 19, *Transportation*), construction of the water conveyance facilities would not create a substantial hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or the upset/accidental release of these materials. As such, these impacts would be less than significant.

Mitigation Measure HAZ-1a: Perform Preconstruction Surveys, Including Soil and Groundwater Testing, at Known or Suspected Contaminated Areas within the Construction Footprint, and Remediate and/or Contain Contamination

Please refer to Mitigation Measure HAZ-1a under Impact HAZ-1 in the discussion of Alternative 1A.

Mitigation Measure HAZ-1b: Perform Pre-Demolition Surveys for Structures to Be Demolished within the Construction Footprint, Characterize Hazardous Materials and Dispose of Them in Accordance with Applicable Regulations

Please refer to Mitigation Measure HAZ-1b under Impact HAZ-1 in the discussion of Alternative 1A.

Mitigation Measure UT-6a: Verify Locations of Utility Infrastructure

Please see Mitigation Measure UT-6a under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure UT-6c: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Worker and Public Health and Safety

Please see Mitigation Measure UT-6c under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management Plan

Please see Mitigation Measure TRANS-1a under Impact TRANS-1 in the discussion of Alternative 1A in Chapter 19, *Transportation*.

Impact HAZ-2: Expose Sensitive Receptors Located within 0.25 Mile of a Construction Site to Hazardous Materials, Substances, or Waste during Construction of the Water Conveyance Facilities

NEPA Effects: Potential effects related to the handling of hazardous materials as part of construction of the water conveyance facilities would be similar to those described under Impact HAZ-2 for Alternative 1C. There are no hospitals located within 0.25 mile of Alternative 2C. However, as shown

in Figure 24-8, Lakewood Drive, Sycamore Drive, and Summer Lake Community Parks in Oakley, and Mokelumne High (Continuation) School in Courtland would be within 0.25 mile of the construction footprint for this alternative. Sycamore Drive Park would be near a tunnel work area, and Lakewood Drive and Summer Lake Community Parks, and Mokelumne High (Continuation) School would be near a proposed temporary 69 kV transmission line construction footprint. In addition, under this alternative, an operable barrier would be constructed at the head of Old River near the Mossdale Village area of Lathrop, adjacent to land designated for public use and which could include future schools or parks. If a school or park were built prior to the completion of construction of the operable barrier, sensitive receptors would be in close proximity to BDCP construction activities, creating the potential for an adverse effect. However, no school or park is currently proposed within 0.25 mile of the proposed operable barrier site.

Although there would be a risk of accidental spills and leaks of hazardous materials (e.g., fuels, oil, solvents, paints) during facility construction, the quantities of hazardous materials likely to be used during construction activities are likely to be small. Were hazardous materials to be released inadvertently, spills would be localized. Further, BMPs to minimize the potential for the accidental release of hazardous materials and to contain and remediate hazardous spills, as part of the SWPPPs, SPCCPs, and HMMPs, would be implemented, as set forth in Appendix 3B, *Environmental Commitments*. Therefore, it is unlikely that these sensitive receptors would be at risk or adversely affected by exposure to hazardous materials, substances, or waste during construction of the water conveyance facilities. Potential air quality effects on sensitive receptors are discussed in Chapter 22, *Air Quality and Greenhouse Gases.*

CEQA Conclusion: Lakewood Drive, Sycamore Drive, and Summer Lake Community Parks in Oakley, and Mokelumne High (Continuation) School in Courtland are within 0.25 mile of the construction footprint of Alternative 2C. Additionally, under this alternative, an operable barrier would be constructed at the head of Old River near the Mossdale Village area of Lathrop, adjacent to land designated for public use and which could include future schools or parks. If a school or park were built prior to the completion of construction of the operable barrier, sensitive receptors would be in close proximity to BDCP construction activities, creating the potential for an impact on those types of sensitive receptors. However, no school or park is currently proposed within 0.25 mile of the proposed operable barrier site.

During construction of the water conveyance facilities, there would be a risk of accidental spills of hazardous materials. However, the potential for significant impacts on people at these parks due to these potential inadvertent releases would be negligible because spills would likely be small and localized. Further, BMPs to minimize the potential for the accidental release of hazardous materials and to contain and remediate hazardous spills, as part of the SWPPPs, SPCCPs, and HMMPs, would be implemented, as set forth in Appendix 3B, *Environmental Commitments*. Therefore, these sensitive receptors would not be at risk or adversely affected by exposure to hazardous materials, substances, or waste during construction of the water conveyance facilities. As such, this impact would be less than significant.

Potential air quality effects on sensitive receptors are discussed in Chapter 22, *Air Quality and Greenhouse Gases.*

Impact HAZ-3: Potential to Conflict with a Known Hazardous Materials Site and, as a Result, Create a Significant Hazard to the Public or the Environment

NEPA Effects: There are no Cortese List sites within the construction footprint of the Alternative 2C water conveyance facilities. However, as indicated in Table 24-5 and Figure 24-4, Mill Site A, the site of a former large agricultural mill, would be located in a potential borrow and/or spoils areas within the construction footprint of this alternative. This site was identified as a SOC in the 2009 ISA. However, there is no regulatory listing for this site, and no known hazardous materials occur at this site. Consequently, the potential to conflict with hazardous materials at this site is assumed to be minimal, and as such, there will be no hazard to the public or the environment due to construction of the water conveyance facilities. Therefore, this effect would not be adverse.

For those hazardous materials sites identified within the 0.5-mile radius but which are not within the construction footprint, there would be no potential for construction of the water conveyance facilities to disturb those sites such that there would be a re-release of hazardous materials that would create a hazard for the public or environment. The potential for encountering unknown hazardous materials sites during the course of construction is discussed under Impact HAZ-1.

CEQA Conclusion: Mill Site A, the site of a former large agricultural mill, would be located in a potential borrow and/or spoils area within the construction footprint of this alternative. There is no regulatory listing for this site, and no known hazardous materials occur at this site. Therefore, the potential risk to conflict with hazardous materials at this site is negligible, and there would be no hazard to the public or the environment. Therefore, this impact is less than significant. No mitigation is required. The potential for encountering unknown hazardous materials sites during the course of construction is discussed under Impact HAZ-1 for Alternative 1A.

Impact HAZ-4: Result in a Safety Hazard Associated with an Airport or Private Airstrip within 2 Miles of the Water Conveyance Facilities Footprint for People Residing or Working in the Study Area during Construction of the Water Conveyance Facilities

NEPA Effects: Development around an airport, particularly in the approach and departure paths, can create obstructions in the airspace traversed by an approaching or departing aircraft. Additionally, certain land uses have the potential to create hazards to aircraft such as a distracting glare, smoke, steam, or invisible heat plumes. Safety impacts from aircraft accidents near airports are typically avoided by specifying the types of land uses allowed, and thereby limiting the number of people who would be exposed to the risk of an accident, and avoiding land uses that could create hazards to air traffic. Airspace protection primarily involves limitations on the height of objects on the ground near airports.

Safety hazards related to air traffic would be the same as those described for Alternative 1C. Under Alternative 2C, the water conveyance facilities would be within 2 miles of the Delta Air Park, Funny Farm Airport, and Borges-Clarksburg Airport, all private facilities, and Byron Airport (a public air facility), as shown in Figure 24-9. The use of helicopters for stringing the proposed 230 kV transmission lines and of high-profile construction equipment (200 feet or taller), such as cranes, for installation of pipelines, placement of concrete fill in intake piles, and removal of cofferdam sheet piles, for example, and potentially pile drivers, such as would be used during the construction of the intakes, have the potential to result in safety hazards to aircraft during takeoff and landing if the equipment is operated too close to runways. Depending on the location and height of any high-profile construction equipment or structures relative to the Byron Airport, because it is a public air facility, the BDCP may be subject to an OE/AAA to be performed by the FAA, as discussed under

Impact HAZ-4 for Alternative 1A. Compliance with the results of the OE/AAA (14 CFR Part 77), would reduce the risk of adverse effects on air traffic safety due to water conveyance facility construction activities in the vicinity of this airport. In addition, the Caltrans' Division of Aeronautics would be informed in writing, as discussed under Impact HAZ-4 for Alternative 1A, and BDCP proponents would comply with Caltrans' recommendations to avoid any adverse effects on air safety. Consequently, there would be no adverse effect on air safety during construction of the water conveyance facilities.

CEQA Conclusion: The Delta Air Park, Funny Farm Airport, and Borges-Clarksburg Airport, all private airstrips, and Byron Airport, a public air facility, would be within 2 miles of the construction footprint of several proposed water conveyance facilities features, as well as associated work areas for Alternative 2C. The use of helicopters for stringing the proposed 230 kV transmission lines and of high-profile construction equipment (200 feet or taller), such as cranes, for installation of pipelines, placement of concrete fill in intake piles, and removal of cofferdam sheet piles, for example, and potentially pile drivers, such as would be used during the construction of the intakes, have the potential to result in safety hazards to aircraft during takeoff and landing if the equipment is operated too close to runways. BDCP proponents would coordinate with Caltrans' Division of Aeronautics prior to initiating construction and comply with its recommendations based their review, as well comply with the recommendations of the OE/AAA (for Byron Airport). Compliance with these recommendations, which could include limitations necessary to minimize potential problems, such as the use of temporary construction equipment, supplemental notice requirements, and marking and lighting high-profile structures would reduce the potential for impacts on air safety. Accordingly, the impacts on air safety would be less than significant. No mitigation is required.

Impact HAZ-5: Expose People or Structures to a Substantial Risk of Property Loss, Personal Injury or Death Involving Wildland Fires, Including Where Wildlands Are adjacent to Urbanized Areas or Where Residences Are Intermixed with Wildlands, as a Result of Construction, and Operation and Maintenance of the Water Conveyance Facilities

NEPA Effects: Potential hazards related to wildland fire would be similar to those described under Alternative 1C, but would carry the potential to affect an additional area with construction of an operable barrier at the Head of Old River. As shown in Figure 24-10, no portion of Alternative 2C is located in or near an area designated as a High or Very High Fire Hazard Severity Zone. The northernmost and southernmost portions of Alternative 2C would be located are near Moderate Fire Hazard Severity Zones.

As described in Appendix 3B, *Environmental Commitments*, precautions would be taken to prevent wildland fires during construction, and operation and maintenance of the water conveyance facilities. Specifically, in an effort to reduce the potential for fire hazards, the BDCP proponents and/or the contractors would develop and implement an FPCP in coordination with federal, state, and local agencies. Development and implementation of the FPCP would help ensure that people or structures would not be subject to a significant risk of loss, injury or death involving wildland fires. Therefore, this effect would not be adverse.

CEQA Conclusion: Construction of Alternative 2C would involve the use of ignitable materials including, but not limited to, fuels and solvents, which would be used for the operation and maintenance of construction vehicles and other equipment. Additionally, the potential exists for subsurface infrastructure transporting flammable materials to be disrupted during construction.

However, because no portion of Alternative 2C would be located near an area zoned as a High or Very High Fire Hazard Severity Zone and because standard fire safety and prevention measures, as part of a FPCP (Appendix 3B, *Environmental Commitments*); would be implemented, this impact would be less than significant. No mitigation is required.

Impact HAZ-6: Create a Substantial Hazard to the Public or the Environment through the Release of Hazardous Materials or by Other Means during Operation and Maintenance of the Water Conveyance Facilities

NEPA Effects: Potential hazards related to the long-term operation and maintenance of the water conveyance facilities would be similar to those described for Alternative 1C. This alternative may require the transport, storage, and use of chemicals or hazardous waste materials including fuel, oils, grease, solvents, and paints. Solids collected at the solids lagoons, and sediment dredged during periodic maintenance dredging at the intakes and operable barrier at the head of Old River, may contain hazardous constituents (e.g., persistent pesticides, mercury, PCBs). Differences from Alternative 1C could result from potential hazards associated with operational and maintenance activities associated with the operable barrier at the Head of Old River. For example, sediment removal activities associated with gate maintenance could encounter and release contaminated sediments. To ensure that potentially contaminated sediment from maintenance dredging activities at the intakes would not adversely affect soil, groundwater or surface water, a SAP would be implemented prior to any dredging activities, as described under Impact HAZ-1 for this alternative. All sediment would be characterized chemically prior to reuse to ensure that reuse of this material would not result in a hazard to the public or the environment. This facility would require the use of oils and other hazardous materials.

As previously discussed under Impact HAZ-2, Lakewood Drive Park, Sycamore Drive Park, Summer Lake Park, and Mokelumne High (Continuation) School would be within 0.25 mile of the construction footprint for Alternative 2C. Should hazardous materials be inadvertently released in substantially quantities during routine operations and maintenance at the constructed facilities due to improper handling, there would be a potential risk to the public (including sensitive receptors). However, because the types of potentially hazardous materials used during routine operation and maintenance activities would be used in relatively small quantities, and because BMPs, as would be implemented in the SWPPPs, the SPCCPs, and the HMMPs (as detailed in Appendix 3B), would be in place to help prevent the inadvertent release of these materials and to contain and remediate spills should they occur, the risk to sensitive receptors within 0.25 mile of the construction footprint would be negligible. In addition, under Mitigation Measure HAZ-6, solids from the solids lagoons, which could contain hazardous constituents such as persistent pesticides and mercury, would be sampled and characterized to evaluate disposal options, and disposed of accordingly at an appropriate, licensed facility. Therefore, no adverse effects on sensitive receptors as a result of hazards or hazardous materials are anticipated.

Delta Air Park, Funny Farm, Byron Airport, and the Borges-Clarksburg Airport would be within 2 miles of the Alternative 2C construction footprint. With the exception of power transmission lines supplying power to pumps, surge towers, and other equipment used for operation and maintenance, water conveyance facilities operations and maintenance are not anticipated to require high-profile equipment, the use of which near an airport could result in an adverse effect to aircraft. BDCP proponents would adhere to all applicable FAA regulations (14 CFR 77), and would coordinate with Caltrans' Division of Aeronautics prior to any maintenance activities requiring high-profile maintenance equipment and comply with any recommendation Caltrans may have to ensure that

there is no conflict with or adverse effect on air traffic. Compliance with these recommendations, which could include limitations necessary to minimize potential problems, such as the use of temporary construction equipment, supplemental notice requirements, and marking and lighting high-profile structures would reduce the potential for impacts on air safety.

Implementation of the environmental commitments and Mitigation Measure HAZ-6 would ensure that operation and maintenance of the water conveyance facilities under Alternative 2C would not create substantial hazards to the public or the environment through the release of hazardous materials or by other means during operation and maintenance of the water conveyance facilities. Accordingly, there would be no adverse effect.

***CEQA Conclusion*:** The accidental release of hazardous materials to the environment during operation and maintenance of the water conveyance facilities and the potential interference with air safety through the use of high-profile equipment for maintenance of proposed transmission lines could have impacts on the public and environment. However, implementation of the BMPs and other activities required by SWPPPs, HMMPs, SPCCPs, SAPs, and Mitigation Measure HAZ-6, which would ensure that dewatered solids are not reintroduced to the environment and are properly disposed of, as well as adherence to all applicable FAA regulations (14 CFR Part 77) and coordination/compliance with Caltrans' Division of Aeronautics when performing work with high-profile equipment within 2 miles of an airport, which would include implementation of recommendations to provide supplemental notice and/or equip high-profile structures with marking and lighting, would ensure that operation and maintenance of the water conveyance facilities would not create a substantial hazard to the public, environment or air traffic safety. Therefore, this impact would be less than significant.

Impact HAZ-7: Create a Substantial Hazard to the Public or the Environment through the Release of Hazardous Materials or by Other Means as a Result of Implementing Conservation Measures CM2-CM11, CM13, CM14, CM16 and CM18

NEPA Effects: The potential for construction, operation, and maintenance activities associated with the implementation of conservation measures (CM2–CM11, CM13, CM 14, CM16, and CM18) to create hazards to workers, the public, and the environment would be similar to those described under Alternative 1A. Potential variation from Alternative 1A would be anticipated to be minor but could result from the selection of different areas for restoration activities based on the location of the physical water conveyance features associated with each alternative.

Hazardous materials associated with the operation of construction equipment could be released into the environment in the course of the materials' routine transport, use, or disposal. Releases could also occur as a result of accidental circumstances. Similarly, construction activities could encounter known or unknown hazardous materials sites located on or in the vicinity of construction sites, creating the potential for hazardous materials disturbance and release. Other activities, including the intentional demolition of existing structures (e.g., buildings) and reuse of spoil, dredged material and/or RTM, would also present the potential to generate hazards or release hazardous materials. However, prior to the reuse of spoils, dredged material or RTM, these materials would undergo chemical characterization, as described in Appendix 3B, *Environmental Commitments*, to ensure that they are not creating a hazard to the public and environment.

Further, other potential hazards that could result from implementing conservation measures include the possible release of hazardous substances in proximity to sensitive receptors; damage or disruption of existing infrastructure such that hazardous conditions were created; the accidental

release of hazardous substances during operation and maintenance and/or transport (e.g., herbicides for nonnative vegetation control); the release, in the short-term, of pesticides from former agricultural lands as a result of wetland and floodplain restoration; the potential for safety hazards related to construction in the vicinity of an airport; and the potential for wildfire hazards in the vicinity of construction sites.

The potential for these effects is considered adverse because implementation of conservation measures would involve extensive activities that could unintentionally result in the release of hazardous substances or that could expose construction workers or members of the public to hazards. However, with implementation of Mitigation Measures HAZ-1a, HAZ-1b, UT-6a, UT-6c, TRANS-1a, and environmental commitments (discussed previously for Impacts HAZ-1 through HAZ-6, and in detail in Appendix 3B, *Environmental Commitments*), the potential for adverse effects would be reduced. Additionally, the proposed conservation measures would be designed to avoid sensitive receptors and would minimize, to the extent feasible, the need to acquire or traverse areas where the presence of hazardous materials is suspected or has been verified. Thus, this effect would not be adverse.

***CEQA Conclusion**:* The potential for impacts related to the release and exposure of workers and the public to hazardous substances or conditions during construction, operation, and maintenance of CM2–CM11, CM13, CM14, CM16, and CM18 could be significant. Conservation component implementation would involve extensive use of heavy equipment during construction, and/or the use and/or transport of hazardous chemicals during operations and maintenance (e.g., herbicides for nonnative vegetation control). Hazardous materials could be inadvertently released, exposing construction workers or the public to hazards. Construction of restoration projects on or near existing agricultural and industrial land may result in a conflict or exposure to known hazardous materials, and the use of high-profile equipment in close proximity to airport runways could result in hazards to air traffic. However in addition to implementation of SWPPPs, HMMPs, SPCCPs, SAPs, and a FPCP, Mitigation Measures HAZ-1a, HAZ-1b, UT-6a, UT-6c, and TRANS-1a would be implemented, all of which would ensure that these potential impacts are less than significant.

Mitigation Measure HAZ-1a: Perform Preconstruction Surveys, Including Soil and Groundwater Testing, at Known or Suspected Contaminated Areas within the Construction Footprint, and Remediate and/or Contain Contamination

Please refer to Mitigation Measure HAZ-1a under Impact HAZ-1 in the discussion of Alternative 1A.

Mitigation Measure HAZ-1b: Perform Pre-Demolition Surveys for Structures to Be Demolished within the Construction Footprint, Characterize Hazardous Materials and Dispose of Them in Accordance with Applicable Regulations

Please refer to Mitigation Measure HAZ-1b under Impact HAZ-1 in the discussion of Alternative 1A.

Mitigation Measure UT-6a: Verify Locations of Utility Infrastructure

Please see Mitigation Measure UT-6a under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure UT-6c: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Worker and Public Health and Safety

Please see Mitigation Measure UT-6c under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management Plan

Please see Mitigation Measure TRANS-1a under Impact TRANS-1 in the discussion of Alternative 1A in Chapter 19, *Transportation*.

Impact HAZ-8: Increased Risk of Bird–Aircraft Strikes during Implementation of Conservation Measures That Create or Improve Wildlife Habitat

NEPA Effects: The potential for implementation of conservation measures that create or improve wildlife habitat (CM2–CM11) to create hazards air and public safety through increased bird-aircraft strikes would be similar to the potential effects described under Alternative 1A. Potential variation from Alternative 1A would be anticipated to be minor but could result from the selection of different areas for restoration activities based on the location of the physical water conveyance features associated with each alternative. Such variation may result greater or less opportunity for bird-aircraft strikes depending on the location's proximity to airport flight zones. The following airports, because they are in relatively close proximity (within 2 miles) to the ROAs and/or conservation zones could potentially be affected: Travis Air Force Base; Rio Vista Municipal Airport; Funny Farm Airport; Sacramento International Airport, and Byron Airport.

The effect of increased bird-aircraft strikes during implementation of CM2–CM11 would be adverse because it could potentially result in an air and public safety hazard. Mitigation Measure HAZ-8 would reduce the severity of this effect through the development and implementation of measures to reduce, minimize and/or avoid wildlife hazards on air safety. However, this effect is would remain adverse.

CEQA Conclusion: Implementation of CM2–CM11, because they would create or improve wildlife habitat, could potentially attract waterfowl and other birds to areas in proximity to existing airport flight zones, and thereby result in an increase in bird-aircraft strikes, which could result in significant impacts on public safety. The following airports, because they are in relatively close proximity (within 2 miles) to the ROAs and/or conservation zones could potentially be affected: Travis Air Force Base; Rio Vista Municipal Airport; Funny Farm Airport; Sacramento International Airport, and Byron Airport. Mitigation Measure HAZ-8 could reduce the severity of this impact through the ultimate development and implementation of measures to reduce, minimize and/or avoid wildlife hazards on air safety, but not to a less-than-significant level. As such, the impact is significant and unavoidable.

Mitigation Measure HAZ-8: Consult with Individual Airports and USFWS, and Relevant Regulatory Agencies

Please refer to Mitigation Measure HAZ-8 under Impact HAZ-8 in the discussion of Alternative 1A. This mitigation measure will ensure that the potential for increased bird – aircraft strikes as a result of implementing CM2–CM11 in the vicinity of airports are minimized to the greatest extent possible.

24.3.3.8 Alternative 3—Dual Conveyance with Pipeline/Tunnel and Intakes 1 and 2 (6,000 cfs; Operational Scenario A)

Impact HAZ-1: Create a Substantial Hazard to the Public or the Environment through the Release of Hazardous Materials or by Other Means during Construction of the Water Conveyance Facilities

NEPA Effects: Hazards to the public or the environment through the routine transport, use, or disposal of hazardous materials during construction of the water conveyance facilities for Alterative 3 would be similar to those described under Alternative 1A. Under this alternative, however, only Intakes 1 and 2 would be constructed. Thus, it is anticipated that effects associated with the transport and use of fuels for this alternative would be similar, but less severe, than those described for Alternative 1A.

Potential hazards associated with natural gas accumulation in tunnels, existing contaminants in soil, sediment or groundwater, hazardous constituents present in RTM, infrastructure containing hazardous materials, and routine transportation of hazardous materials would be similar to those described under Alternative 1A. Because only Intakes 1 and 2 would be built under this alternative, however, implementation would avoid any site-specific contaminants or hazardous materials associated with the construction of Intakes 3, 4, and 5.

As with Alternative 1A, tunnel construction activities would carry the potential to encounter gases that could enter the tunnels and accumulate to flammable or explosive concentrations. Hazardous constituents associated with RTM are not anticipated; however, the possibility exists for RTM and decanted water to pose a hazard to the construction workers, the public, or the environment. Additionally, stored bulk quantities of hazardous materials that have been released to soils and groundwater could be rereleased during construction, also posing a potential hazard. Water conveyance facilities construction, specifically construction of the intakes, would entail sediment-disturbing activities (e.g., cofferdam installation). Existing infrastructure, including oil and gas wells, also have the potential to release hazardous materials, as would the transport of hazardous materials during facility construction. This alternative would be anticipated to disrupt approximately 144 permanent structures including an estimated 3 residential structures; 7 recreational structures; 90 agricultural storage and support structures and 10 other types of structures (e.g., bridge and other types of infrastructure). These structures may contain hazardous materials that would require proper handling and disposal, if demolition is necessary. As described for Impact HAZ-1 under Alternative 1A, Mitigation Measure HAZ-1b would be implemented by the BDCP proponents to ensure that there are no adverse effects from hazardous materials related to structure demolition.

Further, as described for Alternative 1A under Impact HAZ-1, in general, the transportation of hazardous materials via trucks, trains and ships poses potential risks associated with the accidental release of these materials to the environment. Rerouting vehicular traffic carrying hazardous materials during construction of the water conveyance facilities could increase the risk of accidental release due to inferior road quality or lack of driver familiarity with the modified routes. Hazardous materials transportation routes are presented in Figure 24-2 and in Table 24-4. Routes anticipated to be affected during construction of the water conveyance facilities are described in Chapter 19, *Transportation*. Barges supporting water conveyance facilities construction may also transport hazardous materials such as fuels and lubricants or other chemicals. The potential exists for accidental release of hazardous materials from BDCP-related barges. To avoid effects on the

environment related to this issue, BMPs would be implemented as part of a Barge Operations Plan (as discussed under Impact HAZ-1 for Alternative 1A and in Appendix 3B, *Environmental Commitments*) that would reduce the potential for accidental releases of hazardous materials during transport and transfer. Finally, under this alternative, the proposed conveyance crosses under the existing BNSF/Amtrak San Joaquin line between Bacon Island and Woodward Island; however, the effect of this crossing would likely be minimal because the proposed conveyance would traverse the railroad in a deep bore tunnel (See Chapter 19 for discussion). Further, the UPRR runs proximate to the construction area of the proposed Byron Forebay; however, construction is unlikely to disrupt rail service because much of this line has not been in service recently. Mitigation measures would be in place to ensure that there are no adverse effects on road, rail, or water transportation, and thus the potential for the construction of the water conveyance facilities to pose risks related to the transportation of hazardous materials would be minimal. As described in Chapter 19, *Transportation*, under Mitigation Measure TRANS-1a, a site-specific construction traffic management plan, taking into account hazardous materials transportation, would be prepared and implemented prior to initiation of construction of water conveyance. Barges supporting water conveyance facilities construction may also transport hazardous materials such as fuels and lubricants or other chemicals. The potential exists for accidental release of hazardous materials from BDCP-related barges. To avoid effects on the environment related to this issue, BMPs would be implemented as part of a Barge Operations Plan (as discussed under Impact HAZ-1 for Alternative 1A and in Appendix 3B, *Environmental Commitments*) that would reduce the potential for accidental releases of hazardous materials during transport and transfer. Finally, any potential effects on rail traffic and any hazardous materials transport therein during construction would be reduced with implementation of Mitigation Measure TRANS-1a, which would include stipulations to coordinate with rail providers to develop alternative interim transportation modes (e.g., trucks or buses) that could be used to provide freight and/or passenger service during any longer term railroad closures and daily construction time windows during which construction would be restricted or rail operations would need to be suspended for any activity within railroad rights of way. This would minimize the potential risk of release of hazardous materials being transported via these rails.

As noted in the discussion of Impact HAZ-1 under Alternative 1A, project design will minimize, to the extent feasible, the need to acquire or traverse areas where the presence of hazardous materials is suspected or has been verified. Further, environmental commitments would be implemented, including SWPPPs, SPCCPs, SAPs, and HMMPs; a Barge Operations Plan; and chemical characterization of RTM prior to reuse (e.g., RTM in levee reinforcement) or discharge. Together, the environmental commitments would reduce these potential hazards associated with water conveyance facilities construction. Additionally, the implementation of Mitigation Measures HAZ-1a and HAZ-1b, UT-6a and UT-6c (described in Chapter 20, *Public Services and Utilities*), and TRANS-1a (described in Chapter 19, *Transportation*) would further reduce the potential severity of this impact. As such, construction of the water conveyance facilities would not create a substantial hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or the upset/accidental release of these materials. Thus, this effect would not be adverse.

CEQA Conclusion: Similar to Alternative 1A, construction of the water conveyance facilities under Alternative 3 presents the potential for a direct significant impact on construction personnel, the public and/or the environment associated with a variety of physical and chemical hazardous conditions because of the intensity of construction activities at the north Delta intakes, forebays and conveyance pipelines and tunnels and the hazardous materials that would be needed in these areas during construction. Potential hazards include the routine use of hazardous materials (as defined by

Title 22 of the California Code of Regulations, Division 4.5); natural gas accumulation in water conveyance tunnels; the inadvertent release of existing contaminants in soil, sediment, and groundwater, or hazardous materials in existing infrastructure to be removed; disturbance of electrical transmission lines; and hazardous constituents present in RTM. Under this alternative, however, only Intakes 1 and 2 would be constructed. Thus, it is anticipated that effects associated with the transport and use of fuels for this alternative would be similar, but less severe, than those described for Alternative 1A. Many of these physical and chemical hazardous conditions would occur in close proximity to the towns of Hood and Courtland during construction of the north Delta intakes and the intermediate forebay. Additionally, the potential would exist for the construction of the water conveyance facilities to indirectly result in the release of hazardous materials through the disruption of existing road, rail, or river hazardous materials transport routes because construction would occur in the vicinity of three hazardous material transport routes, three railroad corridors, and waterways with barge traffic and would require construction traffic that could disrupt these routes. For these reasons, this is considered a significant impact. However, with the implementation of the previously described environmental commitments (e.g., SWPPPs, HMMPs, SPCCPs, and a Barge Operations Plan) and Mitigation Measures HAZ-1a and HAZ-1b, UT-6a and UT-6c (described in Chapter 20, *Public Services and Utilities)*, and TRANS-1a (described in Chapter 19, *Transportation*), construction of the water conveyance facilities would not create a substantial hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or the upset/accidental release of these materials. As such, these impacts would be less than significant.

Mitigation Measure HAZ-1a: Perform Preconstruction Surveys, Including Soil and Groundwater Testing, at Known or Suspected Contaminated Areas within the Construction Footprint, and Remediate and/or Contain Contamination

Please refer to Mitigation Measure HAZ-1a under Impact HAZ-1 in the discussion of Alternative 1A.

Mitigation Measure HAZ-1b: Perform Pre-Demolition Surveys for Structures to Be Demolished within the Construction Footprint, Characterize Hazardous Materials and Dispose of Them in Accordance with Applicable Regulations

Please refer to Mitigation Measure HAZ-1b under Impact HAZ-1 in the discussion of Alternative 1A.

Mitigation Measure UT-6a: Verify Locations of Utility Infrastructure

Please see Mitigation Measure UT-6a under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure UT-6c: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Worker and Public Health and Safety

Please see Mitigation Measure UT-6c under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management Plan

Please see Mitigation Measure TRANS-1a under Impact TRANS-1 in the discussion of Alternative 1A in Chapter 19, *Transportation*.

Impact HAZ-2: Expose Sensitive Receptors Located within 0.25 Mile of a Construction Site to Hazardous Materials, Substances, or Waste during Construction of the Water Conveyance Facilities

NEPA Effects: An adverse effect may occur if a construction work site is located within 0.25 mile of an existing or proposed school, or other sensitive receptor, and releases hazardous materials that pose a health hazard. However, no schools, parks or hospitals are located within 0.25 mile of Alternative 3. Therefore, no sensitive receptors would be exposed to hazardous materials, substances, or waste during construction of the water conveyance facilities under Alternative 3. As such, there would be no effect. Potential air quality effects on sensitive receptors are discussed in Chapter 22, *Air Quality and Greenhouse Gases.*

CEQA Conclusion: There are no schools, parks or hospitals located within 0.25 mile of the Alternative 3 water conveyance facilities alignment, therefore, there would be no impact due to exposure of sensitive receptors to hazardous materials, substances or waste during construction of the water conveyance facilities. Accordingly, there would be no impact. No mitigation is required. Potential air quality effects on sensitive receptors are discussed in Chapter 22, *Air Quality and Greenhouse Gases.*

Impact HAZ-3: Potential to Conflict with a Known Hazardous Materials Site and, as a Result, Create a Significant Hazard to the Public or the Environment

NEPA Effects: There are no "Cortese List" sites or known SOCs within the construction footprint of Alternative 3 (Table 24-5 and Figure 24-4), and therefore there would be no conflict pertaining to a known hazardous materials site during construction of the water conveyance facilities, and thus, no related hazard to the public or the environment. For those hazardous materials sites identified within the 0.5-mile radius but which are not within the construction footprint, there would be no potential for construction of the water conveyance facilities to disturb those sites such that there would be a re-release of hazardous materials that would create a hazard for the public or environment. As such, there would be no effect. The potential for encountering unknown hazardous materials sites during the course of construction is discussed under Impact HAZ-1.

CEQA Conclusion: Because there are no known SOCs within the construction footprint of the water conveyance facility under this alternative, there would be no conflict with known hazardous materials sites during construction of the water conveyance facilities, and therefore, no related hazard to the public or the environment. As such, there would be no impact. No mitigation is required. The potential for encountering unknown hazardous materials sites during the course of construction is discussed under Impact HAZ-1.

Impact HAZ-4: Result in a Safety Hazard Associated with an Airport or Private Airstrip within 2 Miles of the Water Conveyance Facilities Footprint for People Residing or Working in the Study Area during Construction of the Water Conveyance Facilities

NEPA Effects: Safety hazards to aircraft posed by high-profile construction equipment, such as cranes and pile drivers, or structures (e.g., proposed transmission lines and towers), would be the same as those described under Alternative 1A. Because the Borges-Clarksburg, Spezia and Walnut Grove Airports (private air facilities) and the Byron Airport (a public air facility) would be located within 2 miles of project features within the construction footprint that may require not only the use of high-profile (200 feet or taller) construction equipment but also the use of helicopters (stringing of a proposed permanent 230 kV transmission line), there could be potential effects on air safety.

However, as required, BDCP proponents would inform Caltrans' Division of Aeronautics in writing prior to construction and would adhere to any recommendations resulting from Caltrans' site investigations, which would ensure that there are no adverse effects on air safety. Further, the BDCP proponents would comply with the recommendations of the OE/AAA (for Byron Airport) (14 CFR 77), as described under Impact HAZ-4 under Alternative 1A. These actions would ensure that there are no adverse effects on air safety.

***CEQA Conclusion*:** The use of helicopters for stringing the proposed 230 kV transmission lines and of high-profile construction equipment (200 feet or taller), such as cranes, for installation of pipelines, placement of concrete fill in intake piles, and removal of cofferdam sheet piles, for example, and potentially pile drivers, such as would be used during the construction of the intakes, have the potential to result in safety hazards to aircraft during takeoff and landing if the equipment is operated too close to runways. Three private airports (Borges-Clarksburg, Spezia, and Walnut Grove Airports) and one public airport (Byron Airport) are located within 2 miles of the construction footprint of Alternative 3. BDCP proponents would coordinate with Caltrans' Division of Aeronautics prior to initiating construction and comply with its recommendations based on its investigation(s), as well comply with the recommendations of the OE/AAA (for Byron Airport). Compliance with these recommendations, which could include limitations necessary to minimize potential problems, such as the use of temporary construction equipment, supplemental notice requirements, and marking and lighting high-profile structures would reduce the potential for impacts on air safety. Accordingly, impacts on air safety would be less than significant. No mitigation is required.

Impact HAZ-5: Expose People or Structures to a Substantial Risk of Property Loss, Personal Injury or Death Involving Wildland Fires, Including Where Wildlands Are adjacent to Urbanized Areas or Where Residences Are Intermixed with Wildlands, as a Result of Construction, and Operation and Maintenance of the Water Conveyance Facilities

NEPA Effects: Hazards related to wildland fires would be similar to those described under Alternative 1A. The northernmost and southernmost extent of this conveyance alignment would be adjacent to zones of moderate fire hazard severity.

As described under Alternative 1A and in Appendix 3B, *Environmental Commitments*, precautions would be taken to prevent wildland fires during construction, and operation and maintenance of the water conveyance facilities in full compliance with Cal-OSHA standards for fire safety and prevention. Additionally, the BDCP proponents would implement fire prevention, control and safety measures as part of a FPCP) in coordination with federal, state, and local agencies. Implementation

of these would help ensure that people or structures would not be subject to a significant risk of loss, injury or death involving wildland fires. Therefore, this effect would not be adverse.

CEQA Conclusion: People or structures would not be subject to a significant risk of loss, injury or death involving wildland fires during construction or operation and maintenance of the water conveyance facilities because the alternative would comply with Cal-OSHA fire prevention and safety standards; BDCP proponents would implement standard fire safety and prevention measures, as part of a FPCP (Appendix 3B, *Environmental Commitments*); and because the water conveyance facilities would not be located in a High or Very High Fire Hazard Severity Zone. Therefore, this impact would be less than significant. No mitigation is required.

Impact HAZ-6: Create a Substantial Hazard to the Public or the Environment through the Release of Hazardous Materials or by Other Means during Operation and Maintenance of the Water Conveyance Facilities

NEPA Effects: Potential hazards related to the long-term operation and maintenance of the water conveyance facilities would be similar to those described for Alternative 1A. Under this alternative, however, the potential for hazards associated with intake pumping plants and sediment basins would be less widespread, as only two intake facilities would be operated and maintained. Nonetheless, this alternative may require the transport, storage, and use of chemicals or hazardous waste materials including fuel, oils, grease, solvents, and paints. Solids collected at the solids lagoons, and sediment dredged during periodic maintenance dredging at the intakes and operable barrier at the head of Old River, may contain hazardous constituents (e.g., persistent pesticides, mercury, PCBs). To ensure that potentially contaminated sediment from maintenance dredging activities at the intakes would not adversely affect soil, groundwater or surface water, a SAP would be implemented prior to any dredging activities, as described under Impact HAZ-1 for this alternative. All sediment would be characterized chemically prior to reuse to ensure that reuse of this material would not result in a hazard to the public or the environment.

Three private airports (The Borges-Clarksburg, Walnut Grove, and Spezia Airports) and one public airport (Byron Airport) would be within 2 miles of the Alternative 3 construction footprint (Figure 24-9 and Table 24-6). With the exception of power transmission lines and towers supplying power to pumps, surge towers, and other equipment used for water conveyance facilities operation and maintenance, water conveyance operations and maintenance are not anticipated to require high-profile equipment, the use of which near an airport runway could result in an adverse effect on aircraft. BDCP proponents would (14 CFR 77), including comply with the recommendations of the OE/AAA (14 CFR 77) for Byron Airport, and would coordinate with Caltrans' Division of Aeronautics prior to any maintenance activities requiring high-profile maintenance equipment to ensure that there is no conflict with or adverse effect on air traffic. Compliance with these recommendations, which could include limitations necessary to minimize potential problems, such as the use of temporary construction equipment, supplemental notice requirements, and marking and lighting high-profile structures would reduce the potential for impacts on air safety.

Potential releases of hazardous materials could result in an adverse effect on workers, the public (including sensitive receptors within 0.25 mile of the water conveyance facilities), and the environment. There are no sensitive receptors (i.e., schools, hospitals and parks) located within 0.25 mile of Alternative 3.

Because the types of potentially hazardous materials used during routine operation and maintenance activities would be used in relatively small quantities, and because BMPs, as would be

implemented in the SWPPPs, HMMPs, and SPCCPs (as described in Appendix 3B and under Impact HAZ-1 for Alternative 1A), would be in place to help prevent the inadvertent release of these materials and to contain and remediate spills should they occur, the risk to the public and environment would be negligible. Further, under Mitigation Measure HAZ-6, dredged sediment and solids from the solids lagoons would be sampled and characterized to evaluate disposal options, and disposed of accordingly at an appropriate, licensed facility. These measures would ensure that this effect is not adverse.

***CEQA Conclusion*:** The accidental release of hazardous materials to the environment during operation and maintenance of the water conveyance facilities and the potential interference with air safety through the use of high-profile equipment for maintenance of proposed transmission lines could have impacts on the public and environment. However, implementation of the BMPs and other activities required by SWPPPs, HMMPs, SPCCPs, SAPs, and Mitigation Measure HAZ-6, which would ensure that dewatered solids are not reintroduced to the environment and are properly disposed of, as well as adherence to all applicable FAA regulations (14 CFR Part 77) and coordination/compliance with Caltrans' Division of Aeronautics when performing work with high-profile equipment within 2 miles of an airport, which would include implementation of recommendations to provide supplemental notice and/or equip high-profile structures with marking and lighting, would ensure that operation and maintenance of the water conveyance facilities would not create a substantial hazard to the public, environment or air traffic safety. Therefore, this impact would be less than significant.

Mitigation Measure HAZ-6: Test Dewatered Solids from Solids Lagoons Prior to Reuse and/or Disposal

Please refer to Mitigation Measure HAZ-6 under Impact HAZ-6 in the discussion of Alternative 1A.

Impact HAZ-7: Create a Substantial Hazard to the Public or the Environment through the Release of Hazardous Materials or by Other Means as a Result of Implementing Conservation Measures CM2-CM11, CM13, CM14, CM16 and CM18

NEPA Effects: The potential for construction, operation, and maintenance activities associated with the implementation of conservation measures (CM2–CM11, CM13, CM 14, CM16, and CM18) to create hazards to workers, the public, and the environment would be similar to those described under Alternative 1A. Hazardous materials associated with the operation of construction equipment could be released into the environment in the course of the materials' routine transport, use, or disposal. Releases could also occur as a result of accidental circumstances. Similarly, construction activities could encounter known or unknown hazardous materials sites located on or in the vicinity of construction sites, creating the potential for their disturbance and release. Other activities, including the intentional demolition of existing structures (e.g., buildings) and reuse of spoil, dredged material and/or RTM, would also present the potential to generate hazards or release hazardous materials. However, prior to the reuse of spoils, dredged material or RTM, these materials would undergo chemical characterization, as described in Appendix 3B, *Environmental Commitments*, to ensure that they are not creating a hazard to the public and environment.

Further, other potential hazards that could result from implementing conservation measures include the possible release of hazardous substances in proximity to sensitive receptors; the accidental release of hazardous substances during operation and maintenance (e.g., herbicides for

nonnative vegetation control); damage or disruption of existing infrastructure such that hazardous conditions were created; the release, in the short-term, of pesticides from former agricultural lands as a result of wetland and floodplain restoration; the potential for safety hazards related to construction in the vicinity of an airport; and the potential for wildfire hazards in the vicinity of construction sites.

These potential effects, were they to occur, would be adverse. However, with implementation of Mitigation Measures HAZ-1a, HAZ-1b, UT-6a, UT-6c, and TRANS-1a, and environmental commitments (discussed previously for Impacts HAZ-1 through HAZ-6, and in detail in Appendix 3B, *Environmental Commitments*), the potential for adverse effects would be reduced. Additionally, the proposed conservation measures would be designed to avoid sensitive receptors and would minimize, to the extent feasible, the need to acquire or traverse areas where the presence of hazardous materials is suspected or has been verified. Thus, this effect would not be adverse.

Potential safety hazards to air traffic related to the potential for increased bird-aircraft strikes as a result of creating or enhancing wildlife habitat are discussed under Impact HAZ-8.

CEQA Conclusion: The potential for impacts related to the release and exposure of workers and the public to hazardous substances or conditions during construction, operation, and maintenance of CM2–CM11, CM13, CM14, CM16, and CM18 could be significant. Conservation component implementation would involve extensive use of heavy equipment during construction, and/or the use and/or transport of hazardous chemicals during operations and maintenance (e.g., herbicides for nonnative vegetation control). These chemicals could be inadvertently released, exposing construction workers or the public to hazards. Construction of restoration projects on or near existing agricultural and industrial land may result in a conflict or exposure to known hazardous materials, and the use of high-profile equipment in close proximity to airport runways could result in hazards to air traffic. However in addition to implementation of SWPPPs, HMMPs, SPCCPs, SAPs, and a FPCP, Mitigation Measures HAZ-1a, HAZ-1b, UT-6a, UT-6c, and TRANS-1a would be implemented, all of which would ensure that these potential impacts are less than significant.

Mitigation Measure HAZ-1a: Perform Preconstruction Surveys, Including Soil and Groundwater Testing, at Known or Suspected Contaminated Areas within the Construction Footprint, and Remediate and/or Contain Contamination

Please refer to Mitigation Measure HAZ-1a under Impact HAZ-1 in the discussion of Alternative 1A.

Mitigation Measure HAZ-1b: Perform Pre-Demolition Surveys for Structures to Be Demolished within the Construction Footprint, Characterize Hazardous Materials and Dispose of Them in Accordance with Applicable Regulations

Please refer to Mitigation Measure HAZ-1b under Impact HAZ-1 in the discussion of Alternative 1A.

Mitigation Measure UT-6a: Verify Locations of Utility Infrastructure

Please see Mitigation Measure UT-6a under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure UT-6c: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Worker and Public Health and Safety

Please see Mitigation Measure UT-6c under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management Plan

Please see Mitigation Measure TRANS-1a under Impact TRANS-1 in the discussion of Alternative 1A in Chapter 19, *Transportation*.

Impact HAZ-8: Increased Risk of Bird–Aircraft Strikes during Implementation of Conservation Measures That Create or Improve Wildlife Habitat

NEPA Effects: The potential for implementation of conservation measures that create or improve wildlife habitat (CM2–CM11) to create hazards air and public safety through increased bird-aircraft strikes would be similar to the potential effects described under Alternative 1A. Potential variation from Alternative 1A would be anticipated to be minor but could result from the selection of different areas for restoration activities based on the location of the physical water conveyance features associated with each alternative. Such variation may result greater or less opportunity for bird-aircraft strikes depending on the location's proximity to airport flight zones. The following airports, because they are in relatively close proximity (within 2 miles) to the ROAs and/or conservation zones could potentially be affected: Travis Air Force Base; Rio Vista Municipal Airport; Funny Farm Airport; Sacramento International Airport, and Byron Airport.

The effect of increased bird-aircraft strikes during implementation of CM2–CM11 would be adverse because it could potentially result in an air and public safety hazard. Mitigation Measure HAZ-8 would reduce the severity of this effect through the development and implementation of measures to reduce, minimize and/or avoid wildlife hazards on air safety. However, this effect is would remain adverse.

CEQA Conclusion: Implementation of CM2–CM11, because they would create or improve wildlife habitat, could potentially attract waterfowl and other birds to areas in proximity to existing airport flight zones, and thereby result in an increase in bird-aircraft strikes, which could result in significant impacts on public safety. The following airports, because they are in relatively close proximity (within 2 miles) to the ROAs and/or conservation zones could potentially be affected: Travis Air Force Base; Rio Vista Municipal Airport; Funny Farm Airport; Sacramento International Airport, and Byron Airport. Mitigation Measure HAZ-8 could reduce the severity of this impact through the ultimate development and implementation of measures to reduce, minimize and/or avoid wildlife hazards on air safety, but not to a less-than-significant level. As such, the impact is significant and unavoidable.

Mitigation Measure HAZ-8: Consult with Individual Airports and USFWS, and Relevant Regulatory Agencies

Please refer to Mitigation Measure HAZ-8 under Impact HAZ-8 in the discussion of Alternative 1A. This mitigation measure will ensure that the potential for increased bird – aircraft strikes as a result of implementing CM2–CM11 in the vicinity of airports are minimized to the greatest extent possible.

24.3.3.9 Alternative 4—Dual Conveyance with Modified Pipeline/Tunnel and Intakes 2, 3, and 5 (9,000 cfs; Operational Scenario H)

Impact HAZ-1: Create a Substantial Hazard to the Public or the Environment through the Release of Hazardous Materials or by Other Means during Construction of the Water Conveyance Facilities

***NEPA Effects*:**

Routine Use of Hazardous Materials

As described in Chapter 3, *Description of Alternatives*, during construction of Alternative 4, four locations would be designated as fueling stations. Each fueling station would occupy 2 acres and would be located adjacent to a concrete batch plant; both the fueling station and the batch plant would be temporary and would only be in place for the duration of construction. Fueling station locations are shown in Figure 24-7 and in Figure M3-4 in the Mapbook Volume. Two fueling stations would be established in currently rural areas on the northern end of the Alternative 4 water conveyance alignment. One would be located within the intake work area for Intake 2, just east of SR 160 across the Sacramento River from Clarksburg, and the other would be located within the intake work area for Intake 5, approximately 2 miles northeast of Courtland. In addition, two fueling stations would be located within RTM areas; one would be located east of I-5 approximately 4 miles east of Vorden, and the other would located on Byron Tract, between Byron Highway and Italian Slough. It is anticipated that equipment and vehicles would be maintained in the field and at on-site maintenance facilities. Bulk fuel would be stored at fueling stations and would potentially pose the risk of vehicle fueling spills and leakage from above-ground storage tanks at fueling stations.

In addition to fuel use and bulk fuel storage, oils, lubricants, and other hazardous materials would be stored onsite and used in equipment, such as compressors, generators, pile drivers, cranes, forklifts, excavators, pumps, or soil compactors throughout the study area during construction. Spills and releases could occur during transfer and use of these materials in the field and over water or adjacent to waterways. Hazardous materials, including paints, solvents, and sealants, would be used in construction of water conveyance facilities features (e.g., intakes, pumping plants, conveyance piping). Fueling and transfer of oils, lubricants and other materials would be performed on work barges and watercraft used for building temporary and permanent in-river facilities, such as intake structures and potentially the operable barrier at the head of Old River, and could be spilled or otherwise released to the environment and result in a hazard.

Construction equipment maintenance is expected to be performed in the field and in central maintenance facilities operated by contractors during construction of the water conveyance facilities. While equipment could be maintained at any work area identified for this alternative, the highest risk of hazards related to equipment maintenance would be anticipated to occur at those sites where the duration and intensity of construction activities would be greatest, including intake and intake pumping plant sites along the east bank of the Sacramento River, at the intermediate forebay on Glannvale Tract, and at Clifton Court Forebay. Construction equipment maintenance activities would also be expected to be performed at work areas related to main tunnel construction shaft sites on Byron Tract; southern Bouldin Island; northern Staten Island; Glannvale Tract at the intermediate forebay site; and on Bacon Island. For a map of all permanent facilities and temporary work areas associated with this alternative, see Figure M3-4 in the Mapbook Volume. Equipment maintenance activities at these facilities would likely include rebuilding pumps or motors,

maintaining equipment hydraulic systems, minor engine repairs and routine lubrication, and replacing worn parts. Spills and other accidental releases of degreasers, fuels, oils or lubricants could result in minor, temporary hazards to workers immediately adjacent to these releases. However, because these chemicals would be used in small quantities by trained personnel, and because BMPs to minimize the potential for these types of accidents and to contain and remediate hazardous spills, should they occur, would be implemented, as set forth in Appendix 3B, *Environmental Commitments*, it is unlikely that the general public or the environment would be adversely affected.

As described in Appendix 3B, *Environmental Commitments*, SWPPPs, HMMPs, and SPCCPs would be developed and implemented by the BDCP proponents as part of the construction process for Alternative 4.

The SPCCPs would minimize effects from spills of oil, oil-containing products, or other hazardous chemicals during construction and operation of the project. The plan would be comprehensive in that it would address actions used to prevent spills and specify actions that will be taken should any spills occur, including emergency notification procedures. BMPs to be implemented as part of the SPCCPs include, but would not be limited to the following.

- Personnel will be trained in emergency response and spill containment techniques, and will also be made aware of the pollution control laws, rules, and regulations applicable to their work.
- When transferring oil or other hazardous materials from trucks to storage containers, absorbent pads, pillows, socks, booms or other spill containment material will be placed under the transfer area.
- Absorbent pads, pillows, socks, booms, and other spill containment materials will be maintained at the hazardous materials storage sites for use in the event of spills.
- Contaminated absorbent pads, pillows, socks, booms, and other spill containment materials will be placed in leak-proof sealed containers until transport to an appropriate disposal facility.
- In the event of a spill, personnel will identify and secure the source of the discharge and contain the discharge with sorbents, sandbags, or other material from spill kits. In addition, regulatory authorities (e.g., National Response Center will be contacted if the spill threatens navigable waters of the United States or adjoining shorelines, as well as other response personnel).
- Equipment used in direct contact with water would be inspected daily to prevent the release of oil.
- Oil-absorbent booms would be used when equipment is used in or immediately adjacent to waters.
- All reserve fuel supplies would be stored only within the confines of a designated staging area.
- Fuel transfers would take place a minimum distance from exclusion/drainage areas and streams, and absorbent pads would be placed under the fuel transfer operation.
- Equipment would be refueled only in designated areas.
- Staging areas would be designed to contain contaminants such as oil, grease, and fuel products so that they do not drain toward receiving waters or storm drain inlets.
- All stationary equipment would be positioned over drip pans.

The SWPPP objectives would be to: (1) identify pollutant sources associated with construction activities and operations that could affect the quality of stormwater; and (2) identify, construct, and implement stormwater pollution prevention measures to reduce pollutants in stormwater discharges during and after construction. It is anticipated that multiple SWPPPs will be prepared for the overall BDCP project construction, with a given SWPPP prepared to cover a particular water conveyance component (e.g., intermediate forebay) or groups of components (e.g., intakes). Generally, the SWPPP would include the provisions listed below.

- A description of potential stormwater pollutants from erosion.
- A description of the management of dredged sediments and hazardous materials present on site during construction (including vehicle and equipment fuels).
- Details of how the sediment and erosion control practices would comply with state and federal water quality regulations.
- A visual monitoring program and a chemical monitoring program for "non-visible" pollutants if the BMPs are breached.

BMPs in the SWPPPs would include but not be limited to the following measures.

- Capture sediment via sedimentation and stormwater detention features.
- Implement concrete and truck washout facilities and appropriately sized storage, treatment, and disposal practices. Clean or replace sanitation facilities (as necessary) and inspect regularly for leaks/spills.
- Cover waste disposal containers during rain events and at the end of every day.
- Store chemicals in watertight containers.
- Reclaim or land-apply construction site dewatering discharges to the extent practicable, or use for other construction purposes (e.g., dust control).
- Implement appropriate treatment and disposal of construction site dewatering from excavations to prevent discharges to surface waters.
- Equipment and materials for cleanup of spills shall be available on site.
- Spills and leaks shall be cleaned up immediately and disposed of properly.
- Ensure that there are trained spill response personnel available.

The HMMPs would provide detailed information on the types of hazardous materials used or stored at all sites associated with the water conveyance facilities (e.g., intake pumping plants, maintenance facilities); phone numbers of city, county, state, and federal agencies; primary, secondary, and final cleanup procedures; emergency-response procedures in case of a spill; and other applicable information. The HMMPs would include measures to minimize the possible environmental impacts associated with spills or releases of hazardous materials (e.g., solvents, paints) during routine construction and operations and maintenance activities. These measures would include but not be limited to those listed here (see Appendix 3B, *Environmental Commitments* for additional detail).

- Fuel, oil, and other petroleum products will be stored only at designated sites.
- Hazardous materials containment containers will be clearly labeled with the material's identity, handling and safety instructions, and emergency contact.

- Storage and transfer of hazardous materials will not be allowed within 100 feet of streams or sites known to contain sensitive biological resources except with the permission of Department of Fish and Wildlife.
- The accumulation and temporary storage of hazardous wastes will not exceed 90 days.
- Soils contaminated by spills or cleaning wastes will be contained and removed to an approved disposal site.
- Hazardous waste generated at work sites, such as contaminated soil, will be segregated from other construction spoils and properly handled, hauled, and disposed of at an approved disposal facility by a licensed hazardous waste hauler in accordance with regulations. BDCP proponents will obtain permits required for such disposal.
- Emergency spill containment and cleanup kits will be located at the facility site. The contents of the kit will be appropriate to the type and quantities of chemical or goods stored at the facility.

Development and implementation of these plans would reduce the potential risk of a release of stored fuels, oils, lubricants or other hazardous materials used during construction and construction equipment operation and maintenance, and would ensure that spills are contained and remediated promptly and completely.

Natural Gas Accumulation in Water Conveyance Tunnels

Under Alternative 4, deep water conveyance tunnels would be constructed. Tunnel 1a, a 29-foot (inside diameter [ID]) single-bore tunnel, would run south from a pipeline adjacent to Intake Pumping Plant 2 to a pipeline adjacent to Intake Pumping Plant 3. From Intake Pumping Plant 3, the tunnel would run southwest under the town of Hood to the intermediate forebay on Glannvale Tract. Tunnel 1b, a 20-foot (ID) single-bore tunnel would run southeast from Intake Pumping Plant 5 to the intermediate forebay. Tunnel 2, a 40-foot (ID) dual-bore tunnel, would run south from the intermediate forebay to a culvert siphon, west of Eucalyptus Island on Byron Tract, that leads to the proposed expanded Clifton Court Forebay, For a map of the proposed tunnel alignment, see Figure M3-4 in the Mapbook Volume.

During construction, there would be the potential to encounter gases that could enter and accumulate to flammable or explosive concentrations in tunnel bores or other excavations. These gases could include methane generated by peat and organic soils or other natural gases, which could seep from deep natural gas reservoirs either through improperly sealed boreholes or natural conduits such as faults and fractures. The thickness of peat and organic soils increases to the west across the Delta, and more than 5,000 oil and gas wells are located throughout the Delta. There are no active and 11 inactive oil or gas wells present within the construction footprint of the proposed Alternative 4 water conveyance alignment; oil and gas wells along the water conveyance facilities alignments are shown in Figure 24-5. Gas fields in the United States are typically located at depths greater than 3,000 feet (U.S. Energy Information Administration 2012). Because the tunnels would be approximately 150 to 160 feet below ground, it is unlikely that a gas field would be encountered during tunneling. However, an evaluation of how these gas fields could affect the constructability of the tunnels would be prepared during the geotechnical investigations performed in the design phase of the water conveyance facilities. For water conveyance facilities construction under Alternative 4, the water conveyance tunnels may receive a Cal-OSHA classification of “gassy or extrahazardous” due to the presence of natural gas wells along the alignment. If the tunnels receive a “gassy or extrahazardous” classification, specialized tunneling equipment, which would need to be approved

by the MSHA, would be required, as would gas detection equipment on the tunnel boring machines, an automatic shutoff of the equipment if gas were detected, and fireproof construction equipment. In addition, the contractor would be required to follow gas monitoring and fire prevention requirements mandated by Cal-OHSA based on the tunnel gas classification in accordance with The Tunnel Safety Orders set forth in the California Code of Regulations (Title 8, Division 1, Chapter 4, Subchapter 20, Article 8, "Tunnel Classifications" [see Section 24.2.2.13). The tunnel ventilation system would include steel ducts capable of reversing the direction of air in order to help control potential fires in the tunnel. Tunnels would be ventilated according to Cal-OSHA requirements. Cal-OSHA requires providing at least 200 fpm of fresh air per person working underground. Additionally, a minimum air velocity of 60 fpm is required to dilute any contaminated gas present within the tunnel. Further, ventilation hardware would comply with Cal-OSHA requirements. The hardware would include steel ducts and be capable of reversing the direction of air flow (for fire control within the tunnel). Adherence to these regulations would reduce the potential for hazards from the accumulation of natural gas in tunnels.

Existing Contaminants in Soil, Groundwater, or Sediment

There may be contaminated areas within the study area that have not been previously identified because of inadequate or missing data, or poor record keeping. During construction of Alternative 4, contaminated soils, sediments and groundwater may be encountered where historical releases have occurred, such as at former storage and distribution facility locations.

The lateral and vertical extent of any historical soil-, sediment-, or water-based contamination within or near the construction footprint is unknown. Although soil contamination, where it exists, is likely to be highly localized, groundwater contamination could have migrated substantial distances and therefore be more widespread than soil contamination. Locations of known oil and gas processing facilities (Figure 24-1) are considered a separate category of SOC due to the potential for spills and leaks at these locations. The lateral and vertical extent of any existing contamination that may be present at these sites is unknown. The number of SOCs may change during right-of-way evaluation, land acquisition, and preconstruction site-clearance investigations or during construction. Additional SOCs may be identified during these activities, and currently identified SOCs may be determined innocuous after site-specific field investigation and testing.

It is likely that contaminated sediments (e.g., persistent pesticide- and mercury-contaminated sediments) will be resuspended during sediment-disturbing activities related to in-river construction (e.g., cofferdam construction at intake sites, operable barrier) and dredging of Clifton Court Forebay for the proposed expansion. Because only Intakes 2, 3, and 5 would be built under this alternative, implementation would avoid any site-specific contaminants or hazardous materials associated with the construction of Intakes 1 and 4. Additionally, water conveyance facilities construction would require in-channel dredging (e.g., for construction of the operable barrier at the head of Old River), which would result in the temporary resuspension of potentially contaminated sediments. Additionally, stored bulk quantities of hazardous materials that have been released to soils and groundwater could be rereleased during construction, also posing a potential hazard.

Concentrations of potential contaminants in Clifton Court Forebay sediment and in the sediment where in-river construction activities would be taking place are not known; therefore, the associated risk cannot be identified. In general, sediment-bound pesticide concentrations in rivers and estuaries vary by season (with rain and the seasonal variation in pesticide applications) and are episodic; pesticide concentrations in sediment are generally higher during rainy season at the onset

of winter rains (Bergamaschi et al. 2007). One study suggests that the mercury concentration in suspended sediment at Freeport, just upstream of the intake locations, is less than 10 ng/l, below the recommended criterion of 50 ng/l (Domagalski 2001). Also, mobilization of potentially contaminated sediments would be directly related to levels of turbidity and suspended sediments resulting from construction activities. Although resulting turbidity has not been modeled, it is anticipated to be low given the permit requirements for controls stipulating that dredging activities be conducted and monitored such that turbidity not increase in receiving waters, measured 300 feet downstream; or that silt curtains be used to control turbidity and reduce the associated mobilization of potentially contaminated sediments.

Mobilization of potentially contaminated sediments is unlikely to be a hazard concern for construction workers because it is not expected that workers would be in direct contact with sediment. Similarly, resuspension of potentially contaminated sediment is unlikely to pose a hazard to the general public or the environment because it would be confined to a relatively small area during construction and would be temporary (e.g., occurring during in-river work and potentially for a few hours following cessation of in-river construction activities). Further, as described in Appendix 3B, *Environmental Commitments,* for any BDCP dredging activity, the BDCP proponents would prepare and implement a pre-dredge sampling and analysis plan (SAP), which would be developed and submitted by the contractors required per standard DWR contract specifications Section 01570. As part of the SAP, prior to any dredging activities, sediment would be evaluated for contaminants that may impact water quality from the following discharge routes from the following discharge routes.

- In-stream discharges during dredging.
- Direct exposure to contaminants in the material through ingestion, inhalation or dermal exposure.
- Effluent (return flow) discharge from an upland disposal site.
- Leachate from upland dredge material disposal that may affect groundwater or surface water.

Additionally, BMPs, including those listed below, would be implemented during in-river construction activities to ensure that disturbed sediment was contained, thus reducing the risk of sediment dispersal away from the immediate area (see Appendix 3B, *Environmental Commitments*).

- Conduct dredging activities in a manner that will not cause turbidity increases in the receiving water, as measured in surface waters 300 feet down-current from the project, to exceed the Basin Plan objectives beyond an averaging period approved by the RWQCB and Department of Fish and Wildlife.
- If turbid conditions generated during dredging exceed the agreed-upon implementation requirements for compliance with the Basin Plan objectives, silt curtains will be utilized to control turbidity.
- Conduct in-river construction activities during low-flow periods to the extent practicable.

To the extent feasible, action alternative design would minimize the need to acquire or traverse areas where the presence of hazardous materials is suspected or has been verified. In addition, under Mitigation Measure HAZ-1a, remediation and/or containment prior to discharge or disposal of contaminated soil and groundwater, as identified in preconstruction surveys, would be performed prior to construction of the proposed water conveyance facilities at known contaminated sites or in areas where contamination is suspected.

Constituents in Reusable Tunnel Material

RTM would consist of materials excavated from the tunnel bore, which would be advanced at a depth of approximately 100 feet bgs and 160 feet bgs under Delta water channels. As described in Section 24.2.1.3, soil conditioners would be added during tunneling activities to facilitate the process, and RTM would be transported from the tunnel through the launching shaft to the surface and then by conveyor belt to RTM areas. At the RTM areas, decant liquids from the RTM would be leached, collected and evaporated. RTM areas would be located just south of Scribner Road adjacent to Intake 2; just south of Lambert Road in Elk Grove, approximately 1.5 miles west of I-5; just north of Dierrsen Road in Elk Grove; west of the proposed intermediate forebay adjacent to the Sacramento River; east of the proposed intermediate forebay both north and south of Twin Cities Road; on the northern and southern end of Staten Island; on southwestern Bouldin Island; and northwest of Clifton Court Forebay on Byron Tract. For a map of proposed RTM areas, see Figure M3-4 in the Mapbook Volume.

As described in Chapter 9, *Geology and Seismicity*, the geologic materials encountered during tunneling are expected to comprise alluvial sediments consisting of a mixture of clay, silt, sand, gravel and minor amounts of organic matter, all deposited prior to the arrival of settlers to California and subsequent mining, agricultural and urban land uses that have produced potential contaminants of concern, as discussed above.

It is anticipated that all tunnel boring additives would be non-toxic and biodegradable. Regardless, before the RTM could be re-used or returned to the environment, it would be managed and at a minimum go through a drying/water-solids separation process and a possible physical or chemical treatment. Depending on the composition of the RTM and type of conditioning agents used, there would be many options for management of the RTM. Management could be done in several ways, including chemical flocculation, settlement/sedimentation, handling at a treatment plant, chemical conditioning or controlled storage. The method of controlled storage (described in Appendix 3C, *Details of Water Conveyance Facilities Components*), similar to landfill storage, would be the method with the broadest impacts because a designated area large enough to store the RTM may be required permanently. If controlled storage is necessary, the RTM would be deposited within designated RTM storage areas. To ensure that the RTM is contained within the designated area, a retaining dike would be built around the perimeter of the RTM area. RTM ponds would aid in RTM management and facilitate the dewatering. Several of the ponds would be designated as leachate ponds. The leachate would be pumped from the drainage system to the leachate ponds for possible additional treatment. To ensure that underlying groundwater is not contaminated, the invert of the RTM pond would be a minimum of 5 feet above the seasonal high groundwater table, and an impervious liner would be placed on the invert of the RTM pond and along the interior slopes of the berms to prevent any contact between the RTM and the groundwater, as described in Appendix 3B, *Environmental Commitments*. Further, as part of the project, RTM would be tested in accordance with the methods outlined in EPA publication SW-846, as required by state and federal regulations prior to reuse (e.g., RTM in levee reinforcement) or disposal. RTM decant liquid would also require testing prior to discharge to meet NPDES or Construction General Permit (Order 2010-0014-DWQ) requirements. Should constituents in RTM or associated decant liquid exceed discharge limits, these tunneling byproducts would be treated to comply with permit requirements. At a minimum, a final clean soil cover would be placed over the dewatered RTM in order to isolate any contaminates in the RTM and then seeded. Decant liquids from RTM may require additional chemical or physical treatment, such as flocculent addition to precipitate suspended sediment, prior to discharging to surface water.

As part of a Material Reuse Plan, prior to construction, draining, and chemical characterization of RTM, the BDCP proponents would identify sites for reusing this material to the greatest extent feasible, in connection with BDCP construction activities, habitat restoration activities, as well as for potential beneficial uses associated with flood protection and management of groundwater levels within the Plan Area. The BCP proponent will undertake a thorough investigation to identify sites for the appropriate reuse of RTM, and will consult relevant parties, such as landowners, reclamation districts, flood protection agencies, state agencies with jurisdiction in the Delta, and counties, in developing site-specific material reuse plans, as described in Appendix 3B, *Environmental Commitments*. Following removal of RTM from the temporary RTM areas, stockpiled topsoil would be reapplied, and disturbed areas would be returned, to the extent feasible, to preconstruction conditions. In some instances it may be infeasible to transport and reuse RTM due to factors such as distance and cost, and/or any environmental effects associated with transport (e.g., unacceptable levels of diesel emissions). In such instances, RTM sites would be evaluated for the potential to reapply topsoil over the RTM and to continue or recommence agricultural activities. If, in consultation with landowners and any other interested parties, BDCP proponents determine that continued use of the land for agricultural or habitat purposes would be infeasible, the potential for other productive uses of the land would be examined, as described in Appendix 3B. Under Alternative 4, the dual-bore tunnel conveyance between the intermediate forebay and a culvert siphon leading to the expanded Clifton Court Forebay would be larger than under other pipeline/tunnel alternatives. Each bore would have an internal diameter of 40 feet and an external diameter of 44 feet, and the distance between the two bores would increase. Consequently, the amount of RTM would be greater than the other pipeline/tunnel alternatives. There would be approximately 27 million cubic yards of RTM generated during construction of Alternative 4. Although additional footprints for RTM are not anticipated, the larger amount of RTM produced relative to the other pipeline/tunnel alternatives could correspondingly increase the hazards associated with disturbing and handling it. RTM management practices and environmental commitments would minimize the potential hazards from RTM.

Electrical Transmission Lines

There are nine overhead power/electrical transmission lines along the proposed Alternative 4 water conveyance facilities alignment (Table 24-3 and Figure 24-6). Disturbance of this infrastructure during construction activities that employ high-profile equipment, such as cranes, could result in safety hazards for construction workers in the immediate vicinity of an energized line. The most significant risk of injury from any power line is the danger of electrical contact between an object on the ground and an energized conductor. Generally, there is less risk of contact with higher voltage lines as opposed to low-voltage lines because of the height of the conductors. When work is performed near transmission lines, electrical contact can occur even if direct physical contact is not made, because electricity can arc across an air gap. The BDCP proponents would be required to comply with Title 8 CCR, Section 2300 ("Low Voltage Electrical Safety Orders") and Section 2700 ("High Voltage Electrical Safety Orders") so that worker and public safety is ensured during work on or in immediate proximity to low- and high-voltage transmission lines. Other hazards associated with electrical transmission lines include potential health risks exposure to EMFs. These potential effects are described and assessed in Chapter 25, *Public Health*.

Alternative 4 will include the construction of a "split" transmission line system that would connect to the existing grid in two different locations. The northern point of interconnection would be located north of Lambert Road and west of Highway 99. From here, a 230 kV transmission line

would run west along Lambert Road, where one segment would run south to the intermediate forebay and then on to tunnel shaft locations on Staten Island, and one segment would run north to connect to a substation, where 69 kV lines would connect to the intake pumping plants. At the southern end of the alignment for Alternative 4, the point of interconnection may be located in one of two possible locations: southeast of Brentwood or adjacent to the Jones pumping plant. A 230 kV transmission line would run from one of these locations to a tunnel shaft northwest of Clifton Court Forebay, and would continue north, following tunnel shaft locations to Bouldin Island, where a 34.5 kV line would continue to the southern end of Staten Island. Because the power required during operation of the water conveyance facilities would be much less than that required during construction, and because it would largely be limited to the intake pumping plants and intermediate forebay, the "split" system would enable all of the power lines extending from the southern point of interconnection to be temporary, limited to the construction schedule for the relevant tunnel reaches and features associated with Clifton Court Forebay. Additionally, those segments extending south of the intermediate forebay on McCormack-Williamson Tract and Staten Island would also be removed following construction of associated tunnel facilities. Erecting the power poles would not involve extensive excavation or material transport; and each pole would occupy a small footprint. Accordingly, the transmission lines (temporary and permanent) would not create an adverse effect related to the release of hazardous materials.

Infrastructure Containing Hazardous Materials

Infrastructure in the study area containing hazardous materials (e.g., natural gas pipelines) could pose hazards to the environment and the public if disturbed by construction activities. As described in Section 24.1.2, pipelines carrying fluids with hazardous characteristics (e.g., petroleum products) cross the Alternative 4 conveyance alignment and construction footprint (Figure 24-3). The number of regional pipeline crossings within the construction disturbance footprint of the all conveyance alternatives is provided in Table 24-3. Natural gas pipelines cross the conveyance alignment near Intake 2, on Staten Island between a safe haven area and a RTM area, and near a main tunnel construction shaft on Bacon Island. Other product pipelines cross the alignment on the northern part of Woodward Island and along the southwestern side of the proposed Clifton Court Forebay expansion and nearby RTM area. Further, hazardous materials storage vessels, such as tanks or other bulk containers used for processing, storage and distribution of fuels, pesticides or other hazardous materials may be present in the Alternative 4 water conveyance facilities construction footprint. Active and inactive oil wells are present throughout the Delta and their locations are shown in Figure 24-5.

In addition, certain residential, agricultural and commercial structures within the Alternative 4 water conveyance facilities footprint would need to be removed. Under Alternative 4, approximately 81 existing structures are within the construction footprint, including an estimated 19 residential structures. Other existing structures within the construction footprint would consist primarily of storage or agricultural support facilities (45); recreational structures (8); and other types of structures (e.g., power/utility structures, bridges, and other types of infrastructure). These structures may contain hazardous materials such as asbestos or lead-based paint, stored liquid paints and solvents, and household or industrial-strength maintenance chemicals and cleaners. Asbestos-containing material is regulated both as a hazardous air pollutant under the Clean Air Act (Chapter 22, *Air Quality and Greenhouse Gases*) and as a potential worker safety hazard by Cal-OSHA (see Section 24.2.2.13). Were these types of hazardous materials to be encountered during structure demolition, the potential for their release and the consequent adverse effects on the public,

construction workers, and the environment would exist. To prevent adverse effects, BDCP proponents would implement Mitigation Measure HAZ-1b, which would require that BDCP proponents coordinate with property owners to identify existing potentially hazardous infrastructure and infrastructure containing potentially hazardous materials, and that BDCP proponents perform pre-demolition surveys to identify and characterize hazardous materials to ensure the safe and appropriate handling and disposal of these materials.

There are six natural gas pipelines, four petroleum product pipelines, 11 known inactive and no active oil or gas wells within the construction footprint for the proposed Alternative 4 water conveyance alignment (Table 24-3, and Figures 24-3 and 24-5). In addition to the regional pipelines in the study area, there are networks of minor oil and gas gathering pipelines, which connect individual oil or gas wells to small storage and preliminary processing facilities operated by the different oil and gas companies working in the study area. Disturbance of this infrastructure during construction of the water conveyance facilities could result in hazards to the environment as well as physical and chemical hazards to the construction workers or the nearby public due to fires, explosions, and release of natural gas or petroleum products. The potential for disturbing oil and gas fields during excavation or tunneling activities is minimal because these fields are typically located at depths greater than 3,000 feet (U.S. Energy Information Administration 2012). Effects would be more likely to occur if utilities were not carefully surveyed prior to construction, including contact with local utility service providers. California Government Code Sections 4216–4216.9 require that anyone planning to excavate contact the appropriate regional notification center at least two working days (but not more than 14 calendar days) before beginning to excavate. Implementation of pre-construction surveys, and then utility avoidance or relocation if necessary, would minimize any potential disruption and hazardous effects due to disruption. Mitigation Measures UT-6a: Verify locations of utility infrastructure, and UT-6c: Relocate utility infrastructure in a way that avoids or minimizes any effect on worker and public health and safety (described in Chapter 20, *Public Services and Utilities*) address these effects.

Routine Transport of Hazardous Materials via Trucks, Trains, and Ships

Generally, the transportation of hazardous materials via trucks, trains and ships poses potential risks associated with the accidental release of these materials to the environment. Alternative 4 would require a heavy volume of materials to be hauled to the construction work areas, increasing the amount of trucks using the transportation system in the study area. Rerouting vehicular traffic carrying hazardous materials during construction of the water conveyance facilities could increase the risk of accidental release due to inferior road quality or lack of driver familiarity with the modified routes. This includes the risk of release of hazardous products or wastes being transported routinely or specifically for construction of the water conveyance facilities, and the corresponding risk of release of fuels (gasoline and diesel) from vehicular accidents. Hazardous materials transportation routes are presented in Figure 24-2 and in Table 24-4. Three designated hazardous materials transportation routes cross the Alternative 4 alignment—State Highways 4, 12, and Byron Highway (Figure 24-2 and in Table 24-4). It is anticipated that traffic on Byron Highway would need to be temporarily rerouted during construction of the siphon at the southwest end of the proposed expanded Clifton Court Forebay. Other routes anticipated to be affected during construction of the water conveyance facilities under this alternative are described in Chapter 19, *Transportation*. As described in Chapter 19, under Mitigation Measure TRANS-1a, a site-specific construction traffic management plan, taking into account land (including rail) and marine hazardous materials transportation, would be prepared and implemented prior to initiating water conveyance facilities

construction. Mitigation Measure TRANS-1a includes stipulations to avoid or reduce potential circulation effects, such as such as providing signage, barricades, and flag people around construction work zones; notifying the public, including schools and emergency service providers of construction activities that could affect transportation; providing alternate access routes, if necessary, to maintain continual circulation in and around construction zones; and requiring direct haulers to pull over in the event of an emergency. As described in Chapter 19, *Transportation*, shipping routes to ports in West Sacramento and Stockton are unlikely to be affected by barge traffic transporting equipment and materials for water conveyance facilities construction. However, barges supporting water conveyance facilities construction may also transport hazardous materials such as fuels, lubricants, or other chemicals. The potential exists for accidental release of hazardous materials from BDCP-related barges. To avoid effects on the environment related to this issue, BMPs implemented as part of a Barge Operations Plan (for detail see Appendix 3B, *Environmental Commitments*), including the following, would avoid and/or minimize this potential adverse effect:

- All tugboats operating at the intake construction sites and the barge landings will keep an oil spill containment kit and spill prevention and response plan on-board.
- In the event of a fuel spill, report immediately to the California Department of Fish and Wildlife Office of Spills Prevention and Response: 800-852-7550 or 800-OILS-911 (800-645-7911).
- When transporting loose materials (e.g., sand, aggregate), barges will use deck walls or other features to prevent loose materials from blowing or washing off of the deck.

Finally, under this alternative, the proposed conveyance crosses under the existing BNSF/Amtrak San Joaquin line between Bacon Island and Woodward Island. Maintaining freight and passenger service on the BNSF line is included in the project design, and the effect of this crossing would be minimal to nonexistent because the proposed conveyance would traverse the railroad in a deep bore tunnel (see Chapter 19, *Transportation*, for discussion). The UPRR Tracy Subdivision (branch line) runs parallel to Byron Highway, between the highway and the proposed expanded Clifton Court Forebay. The proposed conveyance includes a siphon that would cross the railroad at the southwest corner of Clifton Court Forebay. However, construction is unlikely to disrupt rail service because much of this line has not been in service recently. Moreover, if the line were to come back in service, a temporary stretch of track would be installed to take trains around the siphon construction site. The temporary track would be removed once siphon construction was completed. Any potential effects on rail traffic during construction would be reduced with implementation of Mitigation Measure TRANS-1a, which would include stipulations to coordinate with rail providers to develop alternative interim transportation modes (e.g., trucks or buses) that could be used to provide freight and/or passenger service during any longer term railroad closures, and daily construction time windows during which construction would be restricted or rail operations would need to be suspended for any activity within railroad rights of way. This would minimize the potential risk of release of hazardous materials being transported via these railways (see Chapter 19, *Transportation,* for a description).

In summary, during construction of the water conveyance facilities, the potential would exist for direct effects on construction personnel, the public and/or the environment associated with a variety of potentially hazardous conditions because of the intensity of construction activities at the north Delta intakes, forebays, conveyance pipelines, and tunnels, and the hazardous materials that would be used in these areas. Many of these physical and chemical hazardous conditions would occur in close proximity to the towns of Hood and Courtland during construction of the north Delta intakes. This is particularly true for the town of Hood because a permanent 69 kV transmission line

would be constructed in Hood, a 111-acre temporary intake work area would be potentially be located immediately south of the town, and the town is located between Intakes 3 and 5. It is expected that the temporary intake work area would likely be used for offices, equipment staging, delivery, parking, and it is not anticipated that heavy-duty construction activities would occur there. Additionally, large-scale construction activities involving the use of hazardous materials would be located in and near water bodies. Potential hazards include the routine transport, use or disposal of hazardous materials; natural gas accumulation in water conveyance tunnels; the inadvertent release of existing contaminants in soil and groundwater, or hazardous materials in existing infrastructure to be removed; disturbance of electrical transmission lines; and hazardous constituents present in RTM. Additionally, there is the potential for the construction of the water conveyance facilities to indirectly result in the release of hazardous materials through the disruption of existing road, rail, or river hazardous materials transport routes because construction would occur in the vicinity of three hazardous material transport routes, three railroad corridors, and waterways with barge traffic and would require construction traffic that could disrupt these routes. These potential effects are considered adverse because they would potentially result in direct exposure of the public (including construction personnel), and surface water and groundwater to physical and/or chemical hazards as discussed. Mitigation Measures HAZ-1a and HAZ-1b, UT-6a and UT-6c (described in Chapter 20, *Public Services and Utilities*) and TRANS-1a (described in Chapter 19, *Transportation*), combined with the previously described environmental commitments are available to address these effects. As such, construction of the water conveyance facilities would not create a substantial hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or the upset/accidental release of these materials. Accordingly, this would not be an adverse effect.

CEQA Conclusion: During construction of the water conveyance facilities, the potential would exist for direct impacts on construction personnel, the public and/or the environment associated with a variety of hazardous physical or chemical conditions. Such conditions may arise as a result of the intensity and duration of construction activities at the north Delta intakes, forebays and conveyance pipelines and tunnels, and the hazardous materials that would be needed in these areas during construction. Potential hazards include the routine use of hazardous materials (as defined by Title 22 of the California Code of Regulations, Division 4.5); natural gas accumulation in water conveyance tunnels; the inadvertent release of existing contaminants in soil, sediment, and groundwater, or hazardous materials in existing infrastructure to be removed; disturbance of electrical transmission lines; and hazardous constituents present in RTM. Many of these physical and chemical hazardous conditions would occur in close proximity to the towns of Hood and Courtland during construction of the north Delta intakes. This is particularly true for the town of Hood because a permanent 69 kV transmission line would be constructed in Hood, the town is located between Intakes 3 and 5, and a 111-acre temporary intake work area would potentially be located immediately south of the town. Additionally, the potential would exist for the construction of the water conveyance facilities to indirectly result in the release of hazardous materials through the disruption of existing road, rail, or river hazardous materials transport routes because construction would occur in the vicinity of three hazardous material transport routes, three railroad corridors, and waterways with barge traffic and would require construction traffic that could disrupt these routes. For these reasons, this is considered a significant impact. However, with the implementation of the previously described environmental commitments (e.g., SWPPPs, HMMPs, SPCCPs, SAPs, and a Barge Operations Plan) and Mitigation Measures HAZ-1a and HAZ-1b, UT-6a and UT-6c (described in Chapter 20, *Public Services and Utilities*), and TRANS-1a (described in Chapter 19, *Transportation*), construction of the water conveyance facilities would not create a substantial hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or the

upset/accidental release of these materials. The severity of this impact would be reduced with the implementation of these environmental commitments and mitigation measures by identifying and describing potential sources of hazardous materials so that releases can be avoided and materials can be properly handled; detailing practices to monitor pollutants and control erosion so that appropriate measures are taken; implementing onsite features to minimize the potential for hazardous materials to be released to the environment or surface waters; minimizing risk associated with the relocation of utility infrastructure; and coordinating the transport of hazardous materials to reduce the risk of spills. As such, these impacts would be less than significant.

Mitigation Measure HAZ-1a: Perform Preconstruction Surveys, Including Soil and Groundwater Testing, at Known or Suspected Contaminated Areas within the Construction Footprint, and Remediate and/or Contain Contamination

BDCP proponents will identify potential areas of hazardous materials and remediate and/or contain contamination in order to reduce the likelihood of hazardous materials being released into the environment. The BDCP proponents will perform preconstruction hazardous waste investigations at properties to be acquired for construction associated with the BDCP. Areas to be excavated as part of construction of (e.g., for water conveyance facilities, shaft locations, concrete batch plants, intake locations, RTM storage areas, staging areas, forebays, borrow and spoil sites, barge unloading, restoration activities, and other appurtenant facilities) where historical contamination has been identified (e.g., SOCs) or where contamination is suspected (e.g., as evidenced by soil discoloration, odors, differences in soil properties, abandoned USTs) will undergo soil and/or groundwater testing at a certified laboratory. Where concentrations of hazardous constituents, such as fuel, solvents or pesticides in soil or groundwater exceed applicable federal or state thresholds contaminated areas will be avoided or remediated and contained in compliance with applicable state and federal laws and regulations. Groundwater removed with the dewatering system would be treated, as necessary, and discharged to surface waters under an NPDES permit (see Chapter 8, *Water Quality*).

Implementation of this mitigation measure will result in the avoidance, successful remediation or containment of all known or suspected contaminated areas, as applicable, within the construction footprint, which would prevent the release of hazardous materials from these areas into the environment.

Mitigation Measure HAZ-1b: Perform Pre-Demolition Surveys for Structures to Be Demolished within the Construction Footprint, Characterize Hazardous Materials and Dispose of Them in Accordance with Applicable Regulations

BDCP proponents will perform surveys and characterize and dispose of hazardous materials in order to reduce the likelihood that hazardous materials are released into the environment. Where demolition of existing structures is necessary, measures will be implemented to ensure hazards are avoided or minimized and that the release of hazardous materials, such as residual fuel in underground fuel storage tanks, or lead-based paint or asbestos-containing materials in buildings, is avoided. These measures will include the following practices.

- Perform pre-demolition surveys to identify all potentially hazardous materials, including asbestos-containing material and lead-based paint.

- Coordinate with owners of property to be acquired by BDCP proponents to help identify potentially hazardous infrastructure and/or infrastructure containing potentially hazardous materials.
- Characterize and separate hazardous materials from structures before demolition and ensure that such materials are disposed of at an approved disposal site according to applicable regulations.
- Remove underground fuel storage tanks and contents to a licensed disposal site where the tanks will be scraped and the contents disposed of in accordance with applicable regulations.
- Disposal of materials containing PCBs will comply with all applicable regulations, codes, and ordinances. Disposal of large quantities of PCB waste will occur at incinerators approved for burning of PCB-containing waste.
- Implement proper handling and disposal procedures for potentially hazardous materials, such as solvents and household or industrial-strength maintenance chemicals and cleaners in buildings to be demolished.
- As applicable, a Cal-OSHA-certified asbestos and lead-based paint contractor will prepare a site-specific asbestos and/or lead hazard control plan with recommendations for the containment of asbestos and/or lead-based paint materials during demolition activities, for appropriate disposal methods and locations, and for protective clothing and gear for abatement personnel. Site-specific asbestos abatement work would meet the requirements of both the federal Clean Air Act and Cal-OSHA (CCR Title 8, Subchapter 4, Article 4, Section 1529). If asbestos-containing materials are found, contractors licensed to conduct asbestos abatement work will be retained and will direct the abatement. In addition, the applicable Air Quality Management District(s) will be notified 10 days prior to initiation of demolition activities of asbestos-containing materials.
- Containers suspected of, or confirmed as, containing lead-based paint will be separated from other building materials during the demolition process. Separated paint will be classified as a hazardous waste if the lead content exceeds 1,000 parts per million and will be disposed of in accordance with applicable regulations.
- Sewer lines will be plugged with concrete to prevent soil and/or groundwater contamination, and the end of the lines will be flagged above ground for future location and identification.
- Gas lines will be plugged or capped and the end of the lines will be flagged above ground for future location and identification.
- The use of explosives for demolition will not be allowed.
- Hazardous waste, including contaminated soil, generated at demolition sites will be handled, hauled, and disposed of at an appropriately licensed disposal facility under appropriate manifest by a licensed hazardous waste hauler.
- Implementation of this measure will ensure that hazardous materials present in or associated with structures being demolished will not be released into the environment.

Mitigation Measure UT-6a: Verify Locations of Utility Infrastructure

Please see Mitigation Measure UT-6a under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure UT-6c: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Worker and Public Health and Safety

Please see Mitigation Measure UT-6c under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management Plan

Please see Mitigation Measure TRANS-1a under Impact TRANS-1 in the discussion of Alternative 1A in Chapter 19, *Transportation*.

Impact HAZ-2: Expose Sensitive Receptors Located within 0.25 Mile of a Construction Site to Hazardous Materials, Substances, or Waste during Construction of the Water Conveyance Facilities

NEPA Effects: An adverse effect may occur if a construction work site is located within 0.25 mile of an existing or proposed school, or other sensitive receptor, and releases hazardous materials that pose a health hazard. There are no hospitals or parks located within 0.25 mile of Alternative 4. However, as shown in Figure 24-8, Excelsior Middle School in Byron would be within 0.25 mile of the construction footprint for Alternative 4. The school would be near a proposed temporary 230 kV transmission line running to the southeast and northwest. Construction of the transmission line would require the use of heavy equipment, such as dozers, cranes, and off-road work trucks, which would require the routine use of hazardous materials (e.g., fuels, solvents, oil and grease). Consequently, there would be the risk of accidental spills or equipment leaks of these types of hazardous materials, as discussed under Impact HAZ-1.

Although there would be a risk of accidental spills of hazardous materials (e.g., fuels, solvents, paints) during the construction of the proposed temporary transmission line, and generally where heavy construction equipment is operated, the quantities of hazardous materials likely to be used during construction activities are likely to be small. Were hazardous materials to be released inadvertently, spills or equipment leaks would be localized and minimal, and thus there would be no risk to anyone not in immediate proximity to these releases spills. Further, as discussed under Impact HAZ-1, BMPs to minimize the potential for the accidental release of hazardous materials and to contain and remediate hazardous spills, as part of the SWPPPs, SPCCPs, and HMMPs, would be implemented, as set forth in Appendix 3B, *Environmental Commitments.* Therefore, the students and staff at Excelsior Middle School would not be exposed to hazardous materials, substances, or waste during construction of the water conveyance facilities. As such, there would be no adverse effect. Potential air quality effects on sensitive receptors are discussed in Chapter 22, *Air Quality and Greenhouse Gases.*

In addition, under this alternative, an operable barrier would be constructed at the head of Old River near the Mossdale Village area of Lathrop, adjacent to land designated for public use and which could include future schools or parks. If a school or park were built prior to the completion of construction of the operable barrier, sensitive receptors would be in close proximity to BDCP

construction activities, creating the potential for an adverse effect. However, because there is currently no school or park within 0.25 mile of the operable barrier site, and because no school or park is currently proposed within 0.25 mile of that site, there would be no adverse effect on sensitive receptors at this site.

CEQA Conclusion: There are no parks or hospitals located within 0.25 mile of the Alternative 4 water conveyance facilities alignment. However, Excelsior Middle School is located within 0.25 mile of the proposed construction footprint of a proposed temporary 230 kV transmission line. Additionally, under this alternative, an operable barrier would be constructed at the head of Old River near the Mossdale Village area of Lathrop, adjacent to land designated for public use and which could include future schools or parks. If a school or park were built prior to the completion of construction of the operable barrier, sensitive receptors would be in close proximity to BDCP construction activities, creating the potential for an impact on those types of sensitive receptors. However, no school or park is currently proposed within 0.25 mile of the proposed operable barrier site.

Construction of the 230 kV temporary transmission line would require the routine use of hazardous materials (e.g., fuels, solvents, oil and grease) because heavy machinery such as cranes, off-road work trucks, and dozers would be required. Consequently, there would be the risk of accidental spills and equipment leaks of these types of hazardous materials during construction of the transmission line. However, the quantities of hazardous materials likely to be used during construction activities are likely to be small. Were hazardous materials to be released inadvertently, spills or equipment leaks would be localized and minimal, and thus there would be no risk to anyone not in immediate proximity to these releases. Further, BMPs to minimize the potential for the accidental release of hazardous materials and to contain and remediate hazardous spills, as part of the SWPPPs, SPCCPs, and HMMPs, would be implemented. Therefore, staff and students at Excelsior Middle School would not be at risk or adversely affected by exposure to hazardous materials, substances, or waste during construction of the water conveyance facilities. As such, this impact would be less than significant. No mitigation is required.

Potential air quality effects on sensitive receptors are discussed in Chapter 22, *Air Quality and Greenhouse Gases.*

Impact HAZ-3: Potential to Conflict with a Known Hazardous Materials Site and, as a Result, Create a Significant Hazard to the Public or the Environment

NEPA Effects: As described in Section 24.1, the storage and use of bulk quantities of hazardous materials, such as pesticides, fuels, and solvents, is common throughout the study area. The locations of known or suspected SOCs that may have contaminated soils and/or groundwater were identified in the study area during the ISA and are presented in Figure 24-4. SOCs within 0.5 mile of the construction footprint, as well as those within the construction footprint, for this alternative are identified in Table 24-5. The number of SOCs may change during right-of-way evaluation, land acquisition and preconstruction site-clearance investigations or during construction. Additional SOCs may be identified during these activities, and currently identified SOCs may be determined innocuous after site-specific field investigation and testing.

California Government Code 65962.5 directs DTSC to compile a list, known as the "Cortese List," of hazardous materials sites. These sites consist of leaking underground storage tanks, solid waste facilities, landfills and sites with potential or confirmed hazardous substance releases. Although this list is no longer updated by the state, it nonetheless provides valuable information to developers to

prevent the re-release of hazardous materials resulting from excavation or disturbance of hazardous materials by preventing unanticipated disturbance of these sites. "Cortese List" sites make up a subset of the mapped SOCs.

There are no "Cortese List" sites or known SOCs within the construction footprint of Alternative 4 (Table 24-5 and Figure 24-4). As such, there would be no conflict pertaining to a known hazardous materials site during construction, including for either the north-south or east-west transmission line option, for this alternative of the water conveyance facilities, and thus, no related hazard to the public or the environment. For those hazardous materials sites identified within the 0.5-mile radius but which are not within the construction footprint, there would be no potential for construction of the water conveyance facilities to disturb those sites such that there would be a re-release of hazardous materials that would create a hazard for the public or environment. As such, there would be no effect. The potential for encountering unknown hazardous materials sites during the course of construction is discussed under Impact HAZ-1.

CEQA Conclusion: Because there are no known SOCs within the construction footprint of the water conveyance facility for Alternative 4 there would be no conflict with known hazardous materials sites during construction of the water conveyance facilities, and therefore, no related hazard to the public or the environment. Accordingly, there would be no impact. No mitigation is required. The potential for encountering unknown hazardous materials sites during the course of construction is discussed under Impact HAZ-1.

Impact HAZ-4: Result in a Safety Hazard Associated with an Airport or Private Airstrip within 2 Miles of the Water Conveyance Facilities Footprint for People Residing or Working in the Study Area during Construction of the Water Conveyance Facilities

NEPA Effects: Development around an airport, particularly in the approach and departure paths, can create obstructions in the airspace traversed by an approaching or departing aircraft. Additionally, certain land uses have the potential to create hazards to aircraft such as a distracting glare, smoke, steam, or invisible heat plumes. Safety impacts from aircraft accidents near airports are typically avoided by specifying the types of land uses allowed, and thereby limiting the number of people who would be exposed to the risk of an accident, and avoiding land uses that could create hazards to air traffic. Airspace protection primarily involves limitations on the height of objects on the ground near airports.

High-profile construction equipment, such as tall cranes for installation of pipelines, placement of concrete fill in intake piles, and removal of cofferdam sheet piles, for example, and pile drivers, such as would be used during the construction of the intakes, have the potential to result in safety hazards to aircraft during takeoff and landing if the equipment is operated too close to runways. It is not yet known what the maximum height of the high-profile construction equipment that would be used would be. Tower cranes, for example, may be required, and a typical tower crane can have a total height greater than 200 feet—a height that could be considered an obstruction or hazard to navigable air space if located near an airport. Similarly, tall structures, such as the surge tower at the pumping plant for Intake 2, could also pose a risk to air safety.

As shown in Figure 24-9 and Table 24-6, three private airports (Borges-Clarksburg Airport, Spezia Airport, and Flying B Ranch Airport) and two public airports (Byron Airport and Franklin Field Airport) are located within 2 miles of the water conveyance facilities for Alternative 4. The Borges-Clarksburg Airport, located 2 miles northeast of the town of Clarksburg, is within 2 miles of several proposed water conveyance facilities features—a fueling station; a RTM area; a concrete batch

plant; a borrow and/or spoils area; a temporary work area; and permanent and temporary access roads. Spezia Airport, on Tyler Island, is within 2 miles of a proposed temporary 230 kV transmission line Flying B Ranch Airport, in Elk Grove, is within 2 miles of a permanent 230 kV transmission line. Byron Airport, less than 1.5 miles west of Clifton Court Forebay, is within 2 miles of a proposed RTM area; a proposed permanent access road, as well as a temporary access road; a proposed 230 kV temporary transmission line; temporary work areas; and a siphon and a canal related to the proposed expansion of Clifton Court Forebay. Franklin Field Airport, approximately 4 miles southeast of Franklin, is less than 1 mile from the proposed permanent 230 kV transmission line. With the exception of the proposed transmission lines, construction of these features or work in these areas would not require the use of high-profile construction equipment. Because construction of the proposed transmission lines would potentially require high-profile equipment (e.g., cranes), and because construction of the 230 kV transmission lines would require the use of helicopters during the stringing phase, the safety of air traffic arriving or departing from either of these airports could be compromised during construction of the proposed transmission lines.

To help ensure protection of airspace, under 14 CFR Part 77, the FAA requires project proponents to inform them about proposed construction or alteration of objects within 20,000 feet of a public-use or military runway and having a height exceeding a 100:1 imaginary surface (1 foot upward per 100 feet horizontally) beginning at the nearest point of the runway for runways greater than 3,200 feet in length. For shorter public-use or military runways, the notification surface has a 50:1 slope and extends 10,000 feet from the runway. Exceptions to this notification requirement are made for "any object that would be shielded by existing structures of a permanent and substantial character or by natural terrain or topographic features of equal or greater height, and would be located in the congested area of a city, town, or settlement where it is evident beyond all reasonable doubt that the structure so shielded would not adversely affect safety in air navigation." Notice must be provided for temporary objects such as construction cranes and any object more than 200 feet in height above ground level or above the established airport elevation. Notification of the FAA enables them to evaluate the effect of the proposed object on air navigation through an aeronautical study (OE/AAA). The OE/AAA will indicate whether the project would have a "substantial adverse effect" on air safety. If it is determined that the proposed structure or structures exceeds obstruction standards or will have an adverse effect on navigable airspace, the project proponent is given the opportunity to amend the project proposal to avoid the impact; adjustments to aviation requirements that would accommodate the project are investigated as well. The State Aeronautics Act (Public Utilities Code, Section 21001 et seq.) authorizes Caltrans and local governments to protect navigable airspace and prohibits the construction of any structure or permitting any natural growth of a height which would constitute a hazard to air navigation unless Caltrans first issues a permit (Public Utilities Code, Section 21659). The permit is not required if the FAA has determined that the structure or growth does not constitute a hazard to air navigation or would not create an unsafe condition for air navigation. Caltrans requires notification, in writing, for proposed construction of any state building or enclosure within 2 miles of any airport before an agency acquires title to the property for the building or enclosure or for an addition to an existing site (Public Utilities Code, Section 21655). Caltrans would respond with a written investigation report of the proposed site and provide recommendations, as necessary, to reduce potential hazards to air navigation. DWR would adhere to these recommendations (e.g., recommendations for the marking and/or lighting of temporary or permanent structures exceeding an overall height of 200 feet above ground level), which would reduce the potential for adverse effects on air safety, as would compliance with the recommendations of the OE/AAA. Accordingly, this would not be an adverse effect.

CEQA Conclusion: The use of helicopters for stringing the proposed 230 kV transmission lines and of high-profile construction equipment (200 feet or taller), such as cranes, for installation of pipelines, and potentially pile drivers, such as would be used during the construction of the intakes, have the potential to result in safety hazards to aircraft during takeoff and landing if the equipment is operated too close to runways. Three private airports (Borges-Clarksburg Airport, Spezia Airport, and Flying B Ranch Airport) and two public airports (Byron Airport and Franklin Field Airport)are located within 2 miles of the construction footprint of several features of the water conveyance facilities for Alternative 4, including temporary and permanent transmission lines. DWR would coordinate with Caltrans' Division of Aeronautics prior to initiating construction and comply with its recommendations based on its investigations and compliance with the recommendations of the OE/AAA (for Byron and Franklin Field Airports). These recommendations, which could include limitations necessary to minimize potential problems such as the use of temporary construction equipment, supplemental notice requirements, and marking and lighting high-profile structures, would reduce potential impacts on air safety. Accordingly, this impact would be less than significant. No mitigation is required.

Impact HAZ-5: Expose People or Structures to a Substantial Risk of Property Loss, Personal Injury or Death Involving Wildland Fires, Including Where Wildlands Are adjacent to Urbanized Areas or Where Residences Are Intermixed with Wildlands, as a Result of Construction, and Operation and Maintenance of the Water Conveyance Facilities

NEPA Effects: As shown in Figure 24-10, no portion of Alternative 4 is located in or near an area designated as a High or Very High Fire Hazard Severity Zone. The northernmost and southernmost portions of Alternative 4, where intake facilities and fueling stations, and the expanded Clifton Court Forebay, respectively, would be located, are near Moderate Fire Hazard Severity Zones (Figure 24-10), as is the site of the operable barrier at the head of Old River. Construction, operation, and maintenance of the water conveyance facilities would involve the use of equipment and ignitable materials, and would involve activities that could potentially start fires. For example, as discussed in Chapter 3, *Description of Alternatives,* facility maintenance would consist of activities such as painting, cleaning, repairs, and other routine tasks. Some of these activities would involve the use of flammable chemicals, such as fuels and solvents, which could be inadvertently ignited by sparks from equipment/machinery if proper safety measures were not employed. Further, during construction, fires could be caused by a variety of factors, including vehicle exhaust, welding activities, parking on dry grass, and accidental ignition of fuel. However, as previously discussed, the study area mainly consists of agricultural lands with pockets of rural residential land uses that are not adjacent to wildlands, as well as residential areas that are intermixed with wildlands. The potential for construction or operation and maintenance activities to generate hazards associated with wildland fires would be minimal. Further, as described in Appendix 3B, *Environmental Commitments*, measures to prevent and control wildland fires would be implemented by DWR during construction, operation, and maintenance of the water conveyance facilities in full compliance with Cal-OSHA standards for fire safety and prevention. These measures would include, but not be limited to, the following.

- Construction sites will have an adequate onsite supply of water and all-weather access for firefighting equipment and emergency vehicles.
- A list of all major fire hazards, proper handling and storage procedures for hazardous materials, potential ignition sources and their control, and the type of fire protection equipment necessary to control each major hazard.

- No fires will be allowed at work sites. Smoking will be allowed only in areas designated for smoking, and these areas will be cleared of vegetation, or in enclosed vehicles. Cigarette butts are to be disposed of in car ashtrays or other approved disposal containers and dumped daily in a proper receptacle off the work site.
- The contractor will be responsible for maintaining appropriate fire suppression equipment at the work site including an all-wheel drive water truck or fire truck with a water tank of at least 3,000 gallon capacity. Fire extinguishers, shovels and other firefighting equipment will be available at work sites and on construction equipment. Each vehicle on the ROW will be equipped with a minimum 20 pound (or two 10 pound) fire extinguisher(s) and a minimum of 5 gallons of water in a fire fighting apparatus (e.g., bladder bag).
- At the work site, a sealed fire toolbox will be located at a point accessible in the event of fire. This fire toolbox will contain: one back-pack pump-type extinguisher filled with water, two axes, two McLeod fire tools, and enough shovels so that each employee at the work site can be equipped to fight fire.
- Gasoline-powered construction equipment with catalytic converters will be equipped with shielding or other acceptable fire prevention features. Internal combustion engines will be equipped with spark arrestors.
- Welding sites will include fire prevention provisions.
- The contractor will maintain contact with local firefighting agencies throughout the fire season for updates on fire conditions, and such fire conditions will be communicated to the contractor's employees daily.
- Vehicles will be restricted to the work site unless otherwise allowed for fire control procedures.
- Depending on the characteristics of the construction site, the dimensions and use of the rooms, the on-site equipment, the physical and chemical properties of the substances present and the maximum potential number of workers present, an adequate number of appropriate basic fire-fighting devices and, where required, automatic fire extinguishing systems shall be provided at the site.
- Basic fire-fighting devices and automatic fire extinguishing systems shall be regularly maintained, checked and tested.
- Basic fire-fighting devices shall be positioned in a visible place which is free from obstruction.
- The location of fire-fighting equipment shall be indicated by fire safety signs. The signs shall be sufficiently resistant and placed at appropriate points.
- If substances which can cause combustion or substances the use of which may produce explosive dust or gas are used or preserved on a construction site, special protective measures (ventilation, prohibition on the use of open fire, etc.) shall be applied in order to prevent the risk of fire and explosion.
- Every person at work on a construction site shall, so far as is reasonably practicable, be instructed in the correct use of any fire-fighting equipment which it may be necessary for him to use.

These measures and potentially others will be guided by implementation of a FPCP in coordination with federal, state, and local agencies, as part of the project as an environmental commitment (Appendix 3B, *Environmental Commitments*). Because development and implementation of

measures under the FPCP would help ensure that people or structures would not be subject to a substantial risk of loss, injury or death involving wildland fires and because the proposed water conveyance facilities would not be located in a High or Very High Fire Hazard Severity Zone, this effect would not be adverse.

CEQA Conclusion: People or structures would not be subject to a significant risk of loss, injury or death involving wildland fires during construction or operation and maintenance of the water conveyance facilities because the alternative would comply with Cal-OSHA fire prevention and safety standards; DWR would implement standard fire safety and prevention measures as part of an FPCP (Appendix 3B, *Environmental Commitments*); and because the water conveyance facilities would not be located in a High or Very High Fire Hazard Severity Zone. Therefore, this impact would be less than significant. No mitigation is required.

Impact HAZ-6: Create a Substantial Hazard to the Public or the Environment through the Release of Hazardous Materials or by Other Means during Operation and Maintenance of the Water Conveyance Facilities

NEPA Effects: During long-term operation and maintenance of the water conveyance facilities, the transport, storage, and use of chemicals or hazardous waste materials may be required. Hazardous waste generated at facility sites will be handled, hauled, and disposed of at an appropriately licensed disposal facility under appropriate manifest by a licensed hazardous waste hauler (see Appendix 3B, *Environmental Commitments*). Maintenance requirements for several of the water conveyance facilities features (e.g., tunnels) have not yet been finalized. However, the operation and maintenance of certain alternative features, such as the intake pumping plants, would require the use of hazardous materials, such as fuel, oils, grease, solvents, and paints. For example, planned maintenance at pumping facilities would include checking oil levels, replacing oil in the pumps, and greasing pump bearings. Additionally, routine facility maintenance would involve painting of pumping plants and appurtenant structures, cleaning, repairs, and other routine tasks that ensure the facilities are operated in accordance with design standards.

Under this alternative, in which only three intake facilities would be operated and maintained, the potential for hazards associated with intake pumping plants and sediment basins would be less widespread than under alternatives with five intake facilities. Furthermore, Alternative 4 does not involve an intermediate pumping plant at the intermediate forebay; the relatively smaller, control structure that would replace it would potentially have fewer or less intense hazards associated with its operation and maintenance. However, the operation and maintenance of an operable barrier under this alternative would expand the potential for hazards. Solids collected at the solids lagoons, and sediment dredged during periodic maintenance dredging at the intakes and operable barrier at the head of Old River may contain hazardous constituents (e.g., persistent pesticides, mercury, PCBs). Sediment accumulation in both the northern and southern portion of the expanded Clifton Court Forebay is expected to be minimal over the 50-year permit period. However, it is anticipated that there may be some sediment accumulation at the inlet structure of the northern portion of Clifton Court Forebay. Therefore, while overall sediment accumulation in this forebay is not expected to be substantial, some dredging may be required at the inlet structure to maintain an even flow path.

Facility equipment maintenance would be required for the intake pumping plants, sedimentation basins and solids lagoons, the intermediate forebay, the control structure at the proposed expanded Clifton Court Forebay and the operable barrier and boat lock at the head of Old River. Timing of

maintenance activities would be variable and would be dictated by the schedule and day-to-day requirements of specific components being maintained. Maintenance activities at the intakes would include debris and sediment removal, biofouling and corrosion prevention, and repairs following physical impacts to the intake structures. Sediment and solids removal from the sedimentation basins and solids lagoons, respectively, is expected to be an ongoing process during operation of the water conveyance facilities. During operation of the water conveyance facilities, water would enter sedimentation basins at three intakes along the east bank of the Sacramento River in the north Delta. Settled sediment would then be pumped to solids lagoons where it would be dewatered and removed for disposal off site; sediment pore water would be pumped back into the sedimentation basins. The dewatered solids, like sediment dredged at the intakes, may contain pesticides from agricultural and urban areas, metals or organic compounds from urban stormwater runoff, and mercury from historic mining upstream of the Delta. The wide variety of pesticides that has been applied, the numerous crops grown in the region, and the fact that predominant land use across the Delta supports agriculture indicate that persistent pesticides that have been widely applied (e.g., organochlorines) and are likely to be found in the soils and potentially sediment throughout the Delta. Because of their relatively low water solubility, persistent pesticides and compounds generally accumulate in the environment in sediment and soil as well as in the fatty tissue of terrestrial and aquatic animals and humans. Human exposure to organochlorine pesticides is primarily through the diet. No comprehensive area-wide soil or sediment sampling program is known to have been conducted to evaluate pesticide residues from agricultural use. Thus, it is not known if persistent pesticide concentrations in dewatered solids from the solids lagoons, or in dredged sediment from around the intakes, would exceed applicable federal or state standards. As previously described, although the concentration of mercury in sediment throughout the study area is not known, one study indicated that the mercury concentration in sediment (suspended) at Freeport, just upstream of the intake locations, was less than 10 ng/l, below the recommended criterion of 50 ng/l (Domagalski 2001).

Based on a worst-case scenario for alternatives with three intakes, considering the throughput of the intakes at a maximum flow of 3,000 cfs, less than 100,000 dry pounds of solids per day would be pumped to the solids lagoons. During periods of high sediment load in the Sacramento River, the daily mass of solids would be expected to increase to up to approximately 152,000 dry pounds per day. The annual volume of solids is anticipated to be less than 300,000 cubic feet (dry solids). An anticipated 10,800 cubic yards of dry sediment/solids would be produced annually as a result of maintenance of the solids lagoons with three intakes operating. Potentially contaminated solids could pose a hazard to the environment if improperly disposed of. Implementation of Mitigation Measure HAZ-6 would help ensure that there are no adverse effects on soil, groundwater or surface water due to improperly disposed of solids from the solids lagoons. Dewatered solids may require special management to meet discharge/disposal requirements. To ensure that potentially contaminated sediment from maintenance dredging activities would not adversely affect soil, groundwater or surface water, a SAP would be implemented prior to any dredging activities, as described under Impact HAZ-1 for this alternative. All dredged sediment would be characterized chemically prior to reuse to ensure that reuse of this material would not result in a hazard to the public or the environment. To the extent practicable, scheduled routine and emergency maintenance activities associated with equipment at the intakes would be conducted at a permanent maintenance facility located at one of the three intakes sites; the precise location has not yet been determined. Replacement of erosion protection on the levees and embankments would also occur periodically.

The operable barrier at the head of Old River would require control gate maintenance every 5 to 10 years; and annual maintenance of the motors, compressors, and control systems. The site would also include a boat lock operator's building and a control building, which would both require periodic routine maintenance. All these would involve potentially hazardous fluids, as described below. Maintenance dredging around the gate to clear out sediment deposits could occur every 3 to 5 years, and spoils would be dried in adjacent areas. Implementation of a SAP prior to any dredging activities would help ensure that there are no adverse effects on soil, groundwater or surface water due to improperly disposed of or reused sediment.

Some of the materials used in routine facility and equipment maintenance may include hydraulic oil for lubricating machinery, fuel, batteries for vehicles and equipment, nitrogen, carbon dioxide or clear agent fire suppression, paints, cleaning solvents and chemicals, and pesticides and herbicides for grounds maintenance. Some of these materials, for example, bulk fuel and lubricants, would likely be stored in the maintenance facilities. Vehicle fueling that occurs during operations and maintenance activities and could pose the risk of fueling spills and leakage from bulk fuel storage tanks. Accidental release of fuels, lubricants, solvents, grounds care chemicals (e.g., fertilizers, pesticides and herbicides), and other hazardous materials could potentially have adverse effects if not contained or if released in large enough quantities, as described under Impact HAZ-1 above. However, under normal use, the inadvertent release of these types of chemicals would likely only have the potential to result in minor, temporary hazards to workers immediately adjacent to these releases. Because these chemicals would be used in small quantities and inadvertent releases would be localized, and because, as discussed under Impact HAZ-1, environmental commitments implemented as part of the HMMPs, SPCCPs, and SWPPPs, including equipping facility buildings with spill containment and cleanup kits; ensuring that hazardous materials containment containers are clearly labeled with identity, handling and safety instructions, and emergency contact; and requiring that personnel be trained in emergency response and spill containment techniques, would minimize the potential for the accidental release of hazardous materials and would help contain and remediate hazardous spills should they occur, it is unlikely that the general public or the environment would be adversely affected due to these types of activities.

Although Excelsior Middle School is within 0.25 mile of the construction footprint for Alternative 4, no hazards would be expected to potentially affect school children or staff at this school as a result of operations and maintenance of the water conveyance facility. The school is located within 0.25 miles of a proposed temporary 230 kV transmission line, which would only be necessary during construction of the water conveyance facility; this feature would be removed once construction was completed, and therefore no operation or maintenance of that feature would be required. There are no hospitals or parks located within 0.25 mile of the construction footprint.

The locations of airports with respect to the pipeline/tunnel alignment are provided in Figure 24-9. The Borges-Clarksburg, Flying B Ranch, and Spezia Airports (private air facilities), and Byron and Franklin Field Airports (public air facilities) would be within 2 miles of this alternative's construction footprint (Figure 24-9 and Table 24-6), as described under Impact HAZ-4 for this alternative. With the exception of power transmission lines supplying power to pumps, surge towers, and other equipment used for water conveyance facilities operation and maintenance, water conveyance facilities operations and maintenance are not anticipated to require high-profile equipment (i.e., equipment with a vertical reach of 200 feet or more), the use of which near an airport runway could result in an adverse effect on aircraft. DWR would adhere to all applicable FAA regulations (14 CFR 77) and coordinate and comply with Caltrans' Division of Aeronautics when performing work with high-profile equipment within 2 miles of an airport to avoid adverse effects

on air safety. Compliance with these recommendations, which could include limitations necessary to minimize potential problems, such as the use of temporary construction equipment, supplemental notice requirements, and marking and lighting high-profile structures would reduce the potential for impacts on air safety.

In summary, during routine operation and maintenance of the water conveyance facilities the potential would exist for the accidental release of hazardous materials and other potentially hazardous releases (e.g., contaminated solids and sediment), and for interference with air safety should high-profile equipment be required for maintenance of the proposed transmission lines near an airport. Accidental hazardous materials releases, such as chemicals directly associated with routine maintenance (e.g., fuels, solvents, paints, oils), are likely to be small, localized, temporary and periodic; therefore, they are unlikely to result in adverse effects on workers, the public, or the environment. Further, BMPs and measures implemented as part of SWPPPs, SPCCPs, SAPs and HMMPs would be developed and implemented as part of the BDCP, as described under Impact HAZ-1, and in detail in Appendix 3B, which would reduce the potential for accidental spills to occur and would result in containment and remediation of spills should they occur. In addition, under Mitigation Measure HAZ-6, solids from the solids lagoons would be sampled and characterized to evaluate disposal options, and disposed of accordingly at an appropriate, licensed facility. These measures would ensure that this effect would not create a substantial hazard to the public or the environment during operation and maintenance of the water conveyance facilities, and therefore there would be no adverse effect.

***CEQA Conclusion*:** The accidental release of hazardous materials to the environment during operation and maintenance of the water conveyance facilities and the potential interference with air safety through the use of high-profile equipment for maintenance of proposed transmission lines could have impacts on the public and environment. However, implementation of the BMPs and other activities required by SWPPPs, HMMPs, SAPs, SPCCPs, and Mitigation Measure HAZ-6, which would ensure that potentially contaminated dewatered solids are not reintroduced to the environment and are properly disposed of, as well as adherence to all applicable FAA regulations (14 CFR Part 77) and coordination/compliance with Caltrans' Division of Aeronautics when performing work with high-profile equipment within 2 miles of an airport, which would include implementation of recommendations to provide supplemental notice and/or equip high-profile structures with marking and lighting, would ensure that operation and maintenance of the water conveyance facilities would not create a substantial hazard to the public, environment or air traffic safety. Therefore, this impact would be less than significant.

Mitigation Measure HAZ-6: Test Dewatered Solids from Solids Lagoons Prior to Reuse and/or Disposal

BDCP proponents will ensure that dewatered solids from the solids lagoons are sampled and tested/characterized at a certified laboratory prior to reuse and/or to evaluate disposal options. All dewatered solids would be disposed of in accordance with applicable regulations.

Implementation of this measure will ensure that dewatered solids do not reintroduce hazardous constituents to the environment if they are reused and that they are disposed of properly if they do contain hazardous levels of contaminants such as persistent pesticides and mercury.

Impact HAZ-7: Create a Substantial Hazard to the Public or the Environment through the Release of Hazardous Materials or by Other Means as a Result of Implementing Conservation Measures CM2-CM11, CM13, CM14, CM16 and CM18

NEPA Effects: Construction, and operation and maintenance of the proposed conservation measures (CM2–CM11, CM13, CM14, CM16, and CM18) as part of Alternative 4 could have effects related to hazardous materials and potential hazards that are similar in nature to those discussed for construction, and operation and maintenance of proposed water conveyance facilities. Although similar in nature, the potential intensity of any effects would likely be substantially lower because the nature of the activities associated with implementing the conservation measures would be different (e.g., deep excavation for pipelines and tunnels would not be required), less heavy construction equipment would be required, and the activities would be implemented in a shorter time frame. Further, potential effects from implementation of the conservation measures would be dispersed over a larger area and would generally involve substantially fewer construction and operation effects associated with built facilities.

Implementing habitat restoration and enhancement projects in conservation zones that have proposed restoration opportunity areas would require use of construction equipment necessary to excavate restoration sites, and to construct or modify levees on and adjacent to Delta waterways. Use and maintenance of this equipment is expected to result in the potential for hazards related to the transport, use, and disposal of hazardous materials, such as fuels, oils, lubricants, paints and other hazardous substances. Other activities, including the intentional demolition of existing structures (e.g., buildings) and reuse of spoil, dredged material and/or RTM, would also present the potential to generate hazards or release hazardous materials, or activities resulting in the damage or disruption of existing infrastructure such that hazardous conditions were created.

Some of the proposed restoration activities that would occur under CM2 – CM11 could involve the conversion of active or fallow agricultural lands to natural landscapes, such as vernal pools, floodplains, grasslands, and wetlands. As described in Section 24.1.2.2, a wide variety of pesticides has been used throughout the study area for decades, and may be present in agricultural lands (e.g., in the soil). As described in Chapter 8, *Water Quality*, in the short-term, tidal and non-tidal wetland restoration, as well as seasonal floodplain restoration (i.e., CM4, CM5, and CM10) over former agricultural lands may result in contamination of water in these restored areas with pesticide residues contained in the soils or other organic matter. Present use pesticides typically degrade fairly rapidly, and in such cases where pesticide containing soils are flooded, dissipation of those pesticides would be expected to occur rapidly. Additionally, significant increases in organochlorine and other persistent legacy pesticides are not expected in the water column because these lipophilic chemicals strongly partition to sediments. Also, concentrations in the water column should be relatively short-lived because these pesticides settle out of the water column via sediment adsorption in low-velocity flow. Accordingly, restoration activities on former agricultural lands, particularly tidal and non-tidal wetland restoration, and seasonal floodplain restoration, would not create a substantial hazard to the public or environment through pesticide release.

In addition, certain operations and maintenance activities, such as controlling for terrestrial and aquatic nonnative vegetation will require the use of potentially hazardous herbicides, for example. These activities would occur in sensitive Delta waterways and upland areas or could occur in and around areas potentially hazardous for construction workers and operations and maintenance workers. Reasonably foreseeable upset and accident conditions related to these materials would also create a potential hazard to the public or environment.

As discussed in Chapter 8, *Water Quality*, Chapter 11, *Fish and Aquatic Resources*, and Chapter 25, *Public Health*, Alternative 1A habitat restoration actions (particularly CM2*, Yolo Bypass Fisheries Enhancement;* CM4*, Tidal Natural Communities Restoration;* CM5*, Seasonally Inundated Floodplain Restoration;* CM6, *Channel Margin Enhancement; and* CM,7 *Riparian Natural Community Restoration*) are likely to result in increased production, mobilization, and bioavailability of methylmercury in the aquatic system due to biogeochemical processes. CM12, *Methylmercury Management* provides for site-specific assessment of restoration areas, integration of design measures to minimize methylmercury production, and site monitoring and reporting.

Additionally, construction of other conservation measures related to reducing ecosystem stressors could result in the unintended release of hazardous materials as a result of constructing facilities near Delta waterways. For example, under CM16 and CM18, non-physical fish barriers and fish hatchery facilities, respectively, would be constructed and could result in effects associated with use of materials during construction that could create hazardous conditions for construction workers and affect sensitive habitat in Delta waterways or on agricultural land. Further, operations and maintenance of CM14 would require the transport, storage and use of liquid oxygen for the existing Stockton Deep Water Ship Channel aeration facility. BMPs already in place for the existing transport, storage and use of liquid oxygen would continue. Thus, no adverse effects related to this aspect of CM14 are anticipated.

The potential also exists for release of hazardous substances within 0.25 mile of a school or other sensitive receptors (i.e., hospitals and parks) depending on the selected locations for implementing the conservation measures. Potential effects would vary according to the equipment used in construction and/or operation and maintenance of a specific conservation measures (i.e., whether hazardous materials are necessary on site), the location and timing of the actions called for in the conservation measure, and the air quality conditions at the time of implementation. Proposed conservation measures would be designed to avoid sensitive receptors, and BMPs to minimize the potential for the accidental release of hazardous materials and to contain and remediate hazardous spills, as part of the SWPPPs, SPCCPs, and HMMPs, should they occur, would be implemented, as set forth in Appendix 3B, *Environmental Commitments*, and therefore, it is unlikely that school children and staff would be at risk or adversely affected.

Constructing conservation measures that could result in a physical change in the environment could also create conflicts or encounters with known or unknown hazardous materials sites located on or in the vicinity of conservation component construction sites. For example, implementing CM2–CM11 for habitat restoration and enhancement purposes could potentially result in effects associated with agricultural and industrial-type hazardous materials at known sites that are listed on the "Cortese List." However, because locations within the eleven conservation zones (described in Chapter 3, *Description of the Alternatives*) for implementing most of the conservation measures have not yet been determined, it is not known if the conservation measures would be implemented on or near "Cortese List" sites. Project design would minimize, to the extent feasible, the need to acquire or traverse areas where the presence of hazardous materials is suspected or has been verified. Implementation of conservation measures could also involve dredging Delta waterways and other activities that could disturb contaminated sediments that hold mercury, pesticides, or other constituents. Concentrations capable of posing hazards or exceeding regulatory thresholds could present a hazard to the construction workers and any contaminated soil, sediment or groundwater would require proper handling or treatment prior to discharge or disposal. Chapter 8, *Water Quality*, provides further discussion of these potential contaminants.

Other potential hazards that could result from implementing conservation measures involve the potential for safety hazards related to construction in the vicinity of a public or private airport, and the potential for wildfire hazards in the vicinity of construction sites. As shown in Figure 24-9 and Table 24-6, there are 11 airports within the study area. With the exception of the Lost Isle Seaplane Base, Franklin Field Airport, and Byron Airport, these are private facilities. The Garibaldi Brothers Airport is located within the Suisun Marsh ROA, just south of Fairfield. Additionally, the Delta Air Park is proximate to the West Delta ROA east of Oakley. Because locations for some of the habitat restoration and enhancement activities have not yet been determined, the potential exists for some of these activities to occur at locations within 2 miles of a private or public airport. High-profile construction equipment (i.e., 200 feet or taller), such as cranes, could result in potential safety hazards to aircraft if operated in the vicinity of a runway; however, it is unlikely that this type of equipment would be employed in the types of habitat restoration, enhancement and protection activities that would be implemented as part of the conservation measures. As described for Impact HAZ-4, effects on air safety due to BDCP implementation would be avoided because BDCP proponents would adhere to all applicable FAA regulations (14 CFR Part 77) and would coordinate with Caltrans' Division of Aeronautics prior to initiating maintenance activities requiring high-profile equipment to assess whether a site investigation is necessary. If a site investigation is performed, BDCP proponents would adhere to Caltrans' recommendations in order to avoid any adverse effects on air safety. Finally, construction occurring within 10,000 feet of a public airport may be subject to an OE/AAA to be performed by the FAA. Compliance with the results of the OE/AAA would reduce the risk for adverse effects on air traffic safety. Potential safety hazards to air traffic related to the potential for increased bird-aircraft strikes as a result of creating or enhancing wildlife habitat are discussed under Impact HAZ-8.

The potential for conservation component implementation to result in or be subject to substantial risk of wildfires is possible, but the risk is expected to be low because many of the activities would be located in or near Delta waterways and adjacent to managed agricultural land. Additionally, construction activities would be managed using standard construction practices to reduce the potential for creating wildfires. Precautions would be taken to prevent wildland fires during construction, and operation and maintenance of the conservation measures would be done in full compliance with Cal-OSHA standards for fire safety and prevention. Additionally, in an effort to reduce the potential for fire hazards, the BDCP proponents would develop and implement BMPs (described under Impact HAZ-5 for this alternative and in Appendix 3B, Environmental Commitments) under a FPCP, in coordination with federal, state, and local agencies, as part of the environmental commitments.

The potential exists for CM2–CM11, CM13, CM14, CM16, and CM18 to result in effects related to the release of or exposure to hazardous materials or other hazards. The potential for these kinds of effects is considered adverse because implementation of these conservation measures would involve extensive use of heavy equipment that could unintentionally result in the release of hazardous substances or that could expose construction workers or members of the public to hazards. Construction of restoration projects on or near existing agricultural and industrial land may result in a conflict or exposure to known hazardous materials.

In summary, this alternative has incorporated environmental commitments (as described under Impacts HAZ-1 through HAZ-6 for this alternative) and Mitigation Measures HAZ-1a, HAZ-1b, UT-6a, UT-6c, and TRANS-1a are available to reduce these potential effects so that they are not adverse.

***CEQA Conclusion*:** The potential for impacts related to the release and exposure of workers and the public to hazardous substances or conditions during construction, operation, and maintenance of CM2–CM11, CM13, CM14, CM16, and CM18 could be significant. Conservation component implementation would involve extensive use of heavy equipment during construction, and/or the use and/or transport of hazardous chemicals during operations and maintenance (e.g., herbicides for nonnative vegetation control). These chemicals could be inadvertently released, exposing construction workers or the public to hazards. Construction of restoration projects on or near existing agricultural and industrial land and/or SOCs may result in a conflict or exposure to known hazardous materials, and the use of high-profile equipment (i.e., 200 feet or higher) in close proximity to airport runways could result in safety hazards to air traffic. However in addition to implementation of SWPPPs, HMMPs, SPCCPs, SAPs, and fire prevention and fire control BMPs as part of a FPCP, Mitigation Measures HAZ-1a, HAZ-1b, UT-6a, UT-6c, and TRANS-1a would be implemented, all of which would ensure that there would be no substantial hazards to the public or the environment due to implementation of the conservation measures. As such, this impact would be less than significant.

Mitigation Measure HAZ-1a: Perform Preconstruction Surveys, Including Soil and Groundwater Testing, at Known or Suspected Contaminated Areas within the Construction Footprint, and Remediate and/or Contain Contamination

Please refer to Mitigation Measure HAZ-1a under Impact HAZ-1 in the discussion of Alternative 4. Implementation of this mitigation measure will result in the avoidance, successful remediation or containment of all known or suspected contaminated areas, as applicable, within the construction footprint, which would prevent the release of hazardous materials from these areas into the environment.

Mitigation Measure HAZ-1b: Perform Pre-Demolition Surveys for Structures to Be Demolished within the Construction Footprint, Characterize Hazardous Materials and Dispose of Them in Accordance with Applicable Regulations

Please refer to Mitigation Measure HAZ-1b under Impact HAZ-1 in the discussion of Alternative 4. Implementation of this measure will ensure that hazardous materials present in or associated with structures being demolished will not be released into the environment.

Mitigation Measure UT-6a: Verify Locations of Utility Infrastructure

Please see Mitigation Measure UT-6a under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure UT-6c: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Worker and Public Health and Safety

Please see Mitigation Measure UT-6c under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management Plan

Please see Mitigation Measure TRANS-1a under Impact TRANS-1 in the discussion of Alternative 1A in Chapter 19, *Transportation*.

Impact HAZ-8: Increased Risk of Bird–Aircraft Strikes during Implementation of Conservation Measures That Create or Improve Wildlife Habitat

NEPA Effects: Implementation of CM2–CM11, measures which would create or improve wildlife habitat and therefore, potentially attract waterfowl and other birds to areas in proximity to existing airport flight zones, could increase the opportunity for bird-aircraft strikes, which could result in impacts on public safety. The following airports, because they are in relatively close proximity (within 2 miles) to the ROAs and/or conservation zones could potentially be affected: Travis Air Force Base; Rio Vista Municipal Airport; Funny Farm Airport; Sacramento International Airport, and Byron Airport.

The FAA funds research and mitigation development, including a bird strike database managed by the Wildlife Services Program of the U.S. Department of Agriculture under terms of an interagency agreement. The database currently contains data from January 1990 through August 2008, recording over 100,000 wildlife strikes. Based on these data, most bird strikes occur during daylight hours between July and October when aircraft are approaching and landing. Most bird strikes (92%) occur at or below 3,000 feet altitude. Since 1990, 52 U.S. civil aircraft were either destroyed or damaged beyond repair due to wildlife strikes, accounting for 23 fatalities. The FAA discourages the improvement of wildlife habitat in proximity to public-use airports to lessen the risk of bird-aircraft strikes. If restoration actions are located within 5,000 feet of airports used by propeller-driven aircraft or within 10,000 feet of those used by jet-driven aircraft (known as the Critical Zone), the risk of bird-aircraft strikes would likely increase. The FAA recommends that these distances be maintained between the AOA and land uses deemed incompatible with safe airport operations (i.e., hazardous wildlife attractants), including agriculture, water management facilities, and active wetlands. Public use airports within the study area are located in areas of mixed land uses. Some are located in proximity to urban uses, but all are located within five miles of substantial existing agricultural lands and wetlands. Thus, all of the public use airports in the study area are currently located in areas with existing wildlife hazards. The effect of increased bird-aircraft strikes during implementation of CM2–CM11 would be adverse because it could potentially result in an air and public safety hazard. Mitigation Measure HAZ-8 would reduce the severity of this effect through the development and implementation of measures to reduce, minimize and/or avoid wildlife hazards on air safety. However, this effect is would remain adverse.

CEQA Conclusion: Implementation of CM2–CM11, because they would create or improve wildlife habitat, could potentially attract waterfowl and other birds to areas in proximity to existing airport flight zones, and thereby result in an increase in bird-aircraft strikes, which could result in significant impacts on public safety. Airports that could be potentially affected would include Travis Air Force Base; Rio Vista Municipal Airport; Funny Farm Airport; Sacramento International Airport; and Byron Airport. Mitigation Measure HAZ-8 could reduce the severity of this impact through the ultimate development of implementation of measures to reduce, minimize and/or avoid wildlife hazards on air safety, but not to a less-than-significant level. As such, the impact is significant and unavoidable.

Mitigation Measure HAZ-8: Consult with Individual Airports and USFWS, and Relevant Regulatory Agencies

The FAA requires commercial service airports to maintain a safe operation, including conducting hazard assessments for wildlife attractants within 5 miles of an airport. The hazard assessment is submitted to FAA, which determines if the airport needs to develop a Wildlife

Hazard Management Plan. (15 CFR 139). The airport's Wildlife Hazard Management Plan contains measures to reduce wildlife hazards, including habitat modification (e.g., vegetation management, filling in of wetlands), wildlife control measures (e.g., harassment, trapping and removing), and use of a radar-based alert system.

BDCP proponents will consult with the individual airports and USFWS during the project-level environmental assessments for individual restoration activities, when site-specific locations and design plans are finalized. At that time, appropriate management plans, strategies, and protocols would be developed to reduce, minimize and/or avoid wildlife hazards on air safety. Site-specific avoidance, minimization, and mitigation measures will be developed during future environmental review once information on the design, location, and implementation of CM3–CM11 is sufficient to permit a project-level analysis.

This mitigation measure will ensure that the potential for increased bird – aircraft strikes as a result of implementing CM2–CM11 in the vicinity of airports are minimized to the greatest extent possible.

24.3.3.10 Alternative 5—Dual Conveyance with Pipeline/Tunnel and Intake 1 (3,000 cfs; Operational Scenario C)

Impact HAZ-1: Create a Substantial Hazard to the Public or the Environment through the Release of Hazardous Materials or by Other Means during Construction of the Water Conveyance Facilities

NEPA Effects: Hazards to the public or the environment through the routine transport, use, or disposal of hazardous materials during construction of the water conveyance facilities for Alterative 5 would be similar to those described under Alternative 1A. Under this alternative, however, only Intake 1 would be constructed. Thus, it is anticipated that effects associated with the transport and use of fuels for this alternative would be similar, but less severe, than those described for Alternative 1A.

Potential hazards associated with natural gas accumulation in tunnels, existing contaminants in soil, sediment or groundwater, hazardous constituents present in RTM, infrastructure containing hazardous materials, and routine transportation of hazardous materials would be similar to those described under Alternative 1A. Because only Intake 1 would be built under this alternative, however, implementation would avoid any site-specific contaminants or hazardous materials associated with the construction of Intakes 2, 3, 4, and 5.

As with Alternative 1A, tunnel construction activities would carry the potential to encounter gases that could enter the tunnels and accumulate to flammable or explosive concentrations. Hazardous constituents associated with RTM are not anticipated; however, the possibility exists for RTM and decanted water to pose a hazard to the construction workers, the public, or the environment. Additionally, stored bulk quantities of hazardous materials that have been released to soils and groundwater could be rereleased during construction, also posing a potential hazard. Water conveyance facilities construction may also require dredging contaminated sediments. Existing infrastructure, including oil and gas wells, also have the potential to release hazardous materials, as would the transport of hazardous materials during facility construction. Additionally, under Alternative 5, approximately 123 existing structures are within the construction footprint, including an estimated 29 residential structures. Other existing structures within the construction footprint

consist primarily of storage or agricultural support facilities (81); recreational structures (4); and other types of structures (9). These structures may contain hazardous materials that would require proper handling and disposal, if demolition is necessary. As described for Impact HAZ-1 under Alternative 1A, Mitigation Measure HAZ-1b would be implemented by the DWR to ensure that there are no adverse effects related to hazardous materials from structure demolition.

Further, as described for Alternative 1A under Impact HAZ-1, in general, the transportation of hazardous materials via trucks, trains and ships poses potential risks associated with the accidental release of these materials to the environment. Rerouting vehicular traffic carrying hazardous materials during construction of the water conveyance facilities could increase the risk of accidental release due to inferior road quality or lack of driver familiarity with the modified routes. Hazardous materials transportation routes are presented in Figure 24-2 and in Table 24-4. Routes anticipated to be affected during construction of the water conveyance facilities are described in Chapter 19, *Transportation*. Barges supporting water conveyance facilities construction may also transport hazardous materials such as fuels and lubricants or other chemicals. The potential exists for accidental release of hazardous materials from BDCP-related barges. To avoid effects on the environment related to this issue, BMPs would be implemented as part of a Barge Operations Plan (as discussed under Impact HAZ-1 for Alternative 1A and in Appendix 3B, *Environmental Commitments*) that would reduce the potential for accidental releases of hazardous materials during transport and transfer. Finally, under this alternative, the proposed conveyance crosses under the existing BNSF/Amtrak San Joaquin line between Bacon Island and Woodward Island; however, the effect of this crossing would likely be minimal because the conveyance would traverse the railroad in a deep bore tunnel (See Chapter 19 for discussion). Further, the UPRR runs proximate to the construction area of the proposed Byron Tract Forebay; however, construction is unlikely to disrupt rail service because much of this line has not been in service recently. Mitigation measures would be in place to ensure that there are no adverse effects on road, rail, or water transportation, and, thus, the potential for the construction of the water conveyance facilities to pose risks related to the transportation of hazardous materials would be minimal. As described in Chapter 19, *Transportation*, under Mitigation Measure TRANS-1a, a site-specific construction traffic management plan, taking into account hazardous materials transportation, would be prepared and implemented prior to initiation of construction of water conveyance facilities. Finally, any potential effects on rail traffic and any hazardous materials transport therein during construction would be reduced with implementation of Mitigation Measure TRANS-1a, which would include stipulations to coordinate with rail providers to develop alternative interim transportation modes (e.g., trucks or buses) that could be used to provide freight and/or passenger service during any longer term railroad closures and daily construction time windows during which construction would be restricted or rail operations would need to be suspended for any activity within railroad rights of way. This would minimize the potential risk of release of hazardous materials being transported via these rails. (see Chapter 19 for a descriptions).

As noted in the discussion of Impact HAZ-1 under Alternative 1A, project design will minimize, to the extent feasible, the need to acquire or traverse areas where the presence of hazardous materials is suspected or has been verified. Further, environmental commitments would be implemented, including SWPPPs, SPCCPs, SAPs, and HMMPs; a Barge Operations Plan; and chemical characterization of RTM prior to reuse (e.g., RTM in levee reinforcement) or discharge. The environmental commitments would reduce these potential hazards associated with water conveyance facilities construction. Additionally, the implementation of Mitigation Measures HAZ-1a and HAZ-1b, UT-6a and UT-6c (described in Chapter 20, *Public Services and Utilities*), and TRANS-1a

(described in Chapter 19, *Transportation*) would further reduce the potential severity of this impact. As such, construction of the water conveyance facilities would not create a substantial hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or the upset/accidental release of these materials. Thus, this effect would not be adverse.

CEQA Conclusion: Similar to Alternative 1A, construction of the water conveyance facilities under Alternative 5 presents the potential for a direct significant impact on construction personnel, the public and/or the environment associated with a variety of physical and chemical hazardous conditions because of the intensity of construction activities at the north Delta intakes, forebays and conveyance pipelines and tunnels and the hazardous materials that would be needed in these areas during construction. Potential hazards include the routine use of hazardous materials (as defined by Title 22 of the California Code of Regulations, Division 4.5); natural gas accumulation in water conveyance tunnels; the inadvertent release of existing contaminants in soil, sediment and groundwater, or hazardous materials in existing infrastructure to be removed; disturbance of electrical transmission lines; and hazardous constituents present in RTM. Under this alternative, however, only Intake 1 would be constructed. Thus, it is anticipated that effects associated with the transport and use of fuels for this alternative would be similar, but less severe, than those described for Alternative 1A.

Many of these physical and chemical hazardous conditions would occur in close proximity to the town of Courtland during construction of the intermediate forebay. Additionally, the potential would exist for the construction of the water conveyance facilities to indirectly result in the release of hazardous materials through the disruption of existing road, rail, or river hazardous materials transport routes because construction would occur in the vicinity of three hazardous material transport routes, three railroad corridors, and waterways with barge traffic and would require construction traffic that could disrupt these routes. For these reasons, this is considered a significant impact. However, with the implementation of the previously described environmental commitments (e.g., SWPPPs, HMMPs, SPCCPs, SAPs, and a Barge Operations Plan) and Mitigation Measures HAZ-1a and HAZ-1b, UT-6a and UT-6c (described in Chapter 20, *Public Services and Utilities)*, and TRANS-1a (described in Chapter 19, *Transportation*), construction of the water conveyance facilities would not create a substantial hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or the upset/accidental release of these materials. As such, these impacts would be less than significant.

Mitigation Measure HAZ-1a: Perform Preconstruction Surveys, Including Soil and Groundwater Testing, at Known or Suspected Contaminated Areas within the Construction Footprint, and Remediate and/or Contain Contamination

Please refer to Mitigation Measure HAZ-1a under Impact HAZ-1 in the discussion of Alternative 1A.

Mitigation Measure HAZ-1b: Perform Pre-Demolition Surveys for Structures to Be Demolished within the Construction Footprint, Characterize Hazardous Materials and Dispose of Them in Accordance with Applicable Regulations

Please refer to Mitigation Measure HAZ-1b under Impact HAZ-1 in the discussion of Alternative 1A.

Mitigation Measure UT-6a: Verify Locations of Utility Infrastructure

Please see Mitigation Measure UT-6a under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure UT-6c: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Worker and Public Health and Safety

Please see Mitigation Measure UT-6c under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management Plan

Please see Mitigation Measure TRANS-1a under Impact TRANS-1 in the discussion of Alternative 1A in Chapter 19, *Transportation*.

Impact HAZ-2: Expose Sensitive Receptors Located within 0.25 Mile of a Construction Site to Hazardous Materials, Substances, or Waste during Construction of the Water Conveyance Facilities

NEPA Effects: An adverse effect may occur if a construction work site is located within 0.25 mile of an existing or proposed school, or other sensitive receptor, and releases hazardous materials that pose a health hazard. However, no schools, parks or hospitals are located within 0.25 mile of Alternative 5. Therefore, no sensitive receptors would be exposed to hazardous materials, substances, or waste during construction of the water conveyance facilities under Alternative 5. As such, there would be no effect. Potential air quality effects on sensitive receptors are discussed in Chapter 22, *Air Quality and Greenhouse Gases.*

***CEQA Conclusion*:** There are no schools, parks or hospitals located within 0.25 mile of the Alternative 5 water conveyance facilities alignment, therefore, there would be no impact due to exposure of sensitive receptors to hazardous materials, substances or waste during construction of the water conveyance facilities. Accordingly, there would be no impact. No mitigation is required. Potential air quality effects on sensitive receptors are discussed in Chapter 22, *Air Quality and Greenhouse Gases.*

Impact HAZ-3: Potential to Conflict with a Known Hazardous Materials Site and, as a Result, Create a Significant Hazard to the Public or the Environment

NEPA Effects: There are no "Cortese List" sites or known SOCs within the construction footprint of Alternative 5 (Table 24-5 and Figure 24-4), and therefore there would be no conflict pertaining to a known hazardous materials site during construction of the water conveyance facilities, and thus, no related hazard to the public or the environment. For those hazardous materials sites identified within the 0.5-mile radius but which are not within the construction footprint, there would be no potential for construction of the water conveyance facilities to disturb those sites such that there would be a re-release of hazardous materials that would create a hazard for the public or environment. As such, there would be no effect. The potential for encountering unknown hazardous materials sites during the course of construction is discussed under Impact HAZ-1.

CEQA Conclusion: Because there are no known SOCs within the construction footprint of the water conveyance facility under this alternative, there would be no conflict with known hazardous

materials sites during construction of the water conveyance facilities, and therefore, no related hazard to the public or the environment. As such, there would be no impact. No mitigation is required. The potential for encountering unknown hazardous materials sites during the course of construction is discussed under Impact HAZ-1.

Impact HAZ-4: Result in a Safety Hazard Associated with an Airport or Private Airstrip within 2 Miles of the Water Conveyance Facilities Footprint for People Residing or Working in the Study Area during Construction of the Water Conveyance Facilities

NEPA Effects: Safety hazards to aircraft posed by high-profile construction equipment, such as cranes and pile drivers, or structures (e.g., proposed transmission lines and towers), would be the same as those described under Alternative 1A. Because the Borges-Clarksburg, Spezia and Walnut Grove Airports (private air facilities) and the Byron Airport (a public air facility) would be located within 2 miles of project features within the construction footprint that may require not only the use of high-profile (200 feet or taller) construction equipment but also the use of helicopters (stringing of a proposed permanent 230 kV transmission line), there could be potential effects on air safety.

However, as required, DWR would inform Caltrans' Division of Aeronautics in writing prior to construction and would adhere to any recommendations resulting from Caltrans' site investigations, which would ensure that there are no adverse effects on air safety. Further, DWR would comply with the recommendations of the OE/AAA (for Byron Airport) (14 CFR 77), as described under Impact HAZ-4 under Alternative 1A. These actions would ensure that there are no adverse effects on air safety.

CEQA Conclusion: The use of helicopters for stringing the proposed 230 kV transmission lines and of high-profile construction equipment (200 feet or taller), such as cranes, for installation of pipelines, placement of concrete fill in intake piles, and removal of cofferdam sheet piles, for example, and potentially pile drivers, such as would be used during the construction of the intakes, have the potential to result in safety hazards to aircraft during takeoff and landing if the equipment is operated too close to runways. Three private airports (Borges-Clarksburg, Spezia, and Walnut Grove Airports) and one public airport (Byron Airport) are located within 2 miles of the construction footprint of Alternative 5. DWR would coordinate with Caltrans' Division of Aeronautics prior to initiating construction and comply with its recommendations based on its investigation(s), as well comply with the recommendations of the OE/AAA (for Byron Airport). Compliance with these recommendations, which could include limitations necessary to minimize potential problems, such as the use of temporary construction equipment, supplemental notice requirements, and marking and lighting high-profile structures would reduce the potential for impacts on air safety. Accordingly, impacts on air safety would be less than significant. No mitigation is required.

Impact HAZ-5: Expose People or Structures to a Substantial Risk of Property Loss, Personal Injury or Death Involving Wildland Fires, Including Where Wildlands Are adjacent to Urbanized Areas or Where Residences Are Intermixed with Wildlands, as a Result of Construction, and Operation and Maintenance of the Water Conveyance Facilities

NEPA Effects: Hazards related to wildland fires would be similar to those described under Alternative 1A. The northernmost and southernmost extent of this conveyance alignment would be adjacent to zones of moderate fire hazard severity.

As described under Alternative 1A and in Appendix 3B, *Environmental Commitments*, precautions would be taken to prevent wildland fires during construction, and operation and maintenance of the water conveyance facilities in full compliance with Cal-OSHA standards for fire safety and prevention. Additionally, DWR would develop and implement fire prevention, safety and control measures as part of a FPCP in coordination with federal, state, and local agencies. Implementation of these would help ensure that people or structures would not be subject to a significant risk of loss, injury or death involving wildland fires. Therefore, this impact would not be adverse.

CEQA Conclusion: People or structures would not be subject to a significant risk of loss, injury or death involving wildland fires during construction or operation and maintenance of the water conveyance facilities because the alternative would comply with Cal-OSHA fire prevention and safety standards; DWR would implement standard fire safety and prevention measures, as part of a FPCP (Appendix 3B, *Environmental Commitments*); and because the water conveyance facilities would not be located in a High or Very High Fire Hazard Severity Zone. Therefore, this impact would be less than significant. No mitigation is required.

Impact HAZ-6: Create a Substantial Hazard to the Public or the Environment through the Release of Hazardous Materials or by Other Means during Operation and Maintenance of the Water Conveyance Facilities

NEPA Effects: Potential hazards related to the long-term operation and maintenance of the water conveyance facilities would be similar to those described for Alternative 1A. Under this alternative, however, the potential for hazards associated with intake pumping plants and sediment basins would be less widespread, as only one intake facility would be operated and maintained. Nonetheless, this alternative may require the transport, storage, and use of chemicals or hazardous waste materials including fuel, oils, grease, solvents, and paints. Solids collected at solids lagoons and sediment dredged during intake maintenance may contain hazardous constituents (e.g., persistent pesticides, mercury, PCBs). To ensure that potentially contaminated sediment from maintenance dredging activities at the intakes would not adversely affect soil, groundwater or surface water, a SAP would be implemented prior to any dredging activities, as described under Impact HAZ-1 for this alternative. All sediment would be characterized chemically prior to reuse to ensure that reuse of this material would not result in a hazard to the public or the environment.

The locations of airports with respect to the pipeline/tunnel alignment are provided in Figure 24-9. The Borges-Clarksburg, Walnut Grove, and Spezia Airports (all private air facilities) and the Byron Airport (a public air facility) would be located within 2 miles of the Alternative 5 construction footprint (Figure 24-9 and Table 24-6). With the exception of power transmission lines supplying power to pumps, surge towers, and other equipment used for water conveyance facilities operation and maintenance, water conveyance facilities operations and maintenance are not anticipated to require high-profile equipment, the use of which near an airport runway could result in an adverse effect on aircraft. DWR would adhere to all applicable FAA regulations (14 CFR 77) and coordinate with Caltrans' Division of Aeronautics prior to initiating maintenance activities requiring high-profile equipment to avoid adverse effects on air safety. Compliance with these recommendations, which could include limitations necessary to minimize potential problems, such as the use of temporary construction equipment, supplemental notice requirements, and marking and lighting high-profile structures would reduce the potential for impacts on air safety.

There are no sensitive receptors (i.e., schools, hospitals and parks) located within 0.25 mile of Alternative 5.

Because the types of potentially hazardous materials used during routine operation and maintenance activities would be used in relatively small quantities, and because BMPs, as would be implemented in the SWPPPs, SPCCPs, and HMMPs, would be in place to help prevent the inadvertent release of these materials and to contain and remediate spills should they occur, the risk to the public and environment would be negligible. Further, under Mitigation Measure HAZ-6, solids from the solids lagoons would be sampled and characterized to evaluate disposal options, and disposed of accordingly at an appropriate, licensed facility. These measures would ensure that this effect is not adverse.

***CEQA Conclusion*:** The accidental release of hazardous materials to the environment during operation and maintenance of the water conveyance facilities and the potential interference with air safety through the use of high-profile equipment for maintenance of proposed transmission lines could have impacts on the public and environment. However, implementation of the BMPs and other activities required by SWPPPs, HMMPs, SPCCPs, SAPs, and Mitigation Measure HAZ-6, which would ensure that dewatered solids are not reintroduced to the environment and are properly disposed of, as well as adherence to all applicable FAA regulations (14 CFR Part 77) and coordination/compliance with Caltrans' Division of Aeronautics when performing work with high-profile equipment within 2 miles of an airport, which would include implementation of recommendations to provide supplemental notice and/or equip high-profile structures with marking and lighting, would ensure that operation and maintenance of the water conveyance facilities would not create a substantial hazard to the public, environment or air traffic safety. Therefore, this impact would be less than significant.

Mitigation Measure HAZ-6: Test Dewatered Solids from Solids Lagoons Prior to Reuse and/or Disposal

Please refer to Mitigation Measure HAZ-6 under Impact HAZ-6 in the discussion of Alternative 1A.

Impact HAZ-7: Create a Substantial Hazard to the Public or the Environment through the Release of Hazardous Materials or by Other Means as a Result of Implementing Conservation Measures CM2-CM11, CM13, CM14, CM16 and CM18

NEPA Effects: The potential for construction, operation, and maintenance activities associated with the implementation of conservation measures (CM2–CM11, CM13, CM 14, CM16, and CM18) to create hazards to workers, the public, and the environment would be similar to those described under Alternative 1A. Effects related to tidal habitat restoration, however, would be less widespread under this alternative, because the target area for restoration under this alternative is limited to approximately 25,000 acres. Hazardous materials associated with the operation of construction equipment could be released into the environment in the course of the materials' routine transport, use, or disposal. Releases could also occur as a result of accidental circumstances. Similarly, construction activities could encounter known or unknown hazardous materials sites located on or in the vicinity of construction sites, creating the potential for their disturbance and release. Other activities, including the intentional demolition of existing structures (e.g., buildings) and reuse of spoil, dredged material and/or RTM, would also present the potential to generate hazards or release hazardous materials. However, prior to the reuse of spoils, dredged material or RTM, these materials would undergo chemical characterization, as described in Appendix 3B, *Environmental Commitments*, to ensure that they are not creating a hazard to the public and environment.

Further, other potential hazards that could result from implementing conservation measures include the possible release of hazardous substances in proximity to sensitive receptors; damage or disruption of existing infrastructure such that hazardous conditions were created; the accidental release of hazardous substances during operation and maintenance (e.g., herbicides for nonnative vegetation control); the release, in the short-term, of pesticides from former agricultural lands as a result of wetland and floodplain restoration; the potential for safety hazards related to construction in the vicinity of an airport; and the potential for wildfire hazards in the vicinity of construction sites.

These potential effects, were they to occur, would be adverse. However, with implementation of Mitigation Measures HAZ-1a, HAZ-1b, UT-6a, UT-6c, TRANS-1a, and environmental commitments (discussed previously for Impacts HAZ-1 through HAZ-6, and in detail in Appendix 3B, *Environmental Commitments*), the potential for adverse effects would be reduced. Additionally, the proposed conservation measures would be designed to avoid sensitive receptors and would minimize, to the extent feasible, the need to acquire or traverse areas where the presence of hazardous materials is suspected or has been verified. Thus, this effect would not be adverse.

Potential safety hazards to air traffic related to the potential for increased bird-aircraft strikes as a result of creating or enhancing wildlife habitat are discussed under Impact HAZ-8.

***CEQA Conclusion*:** The potential for impacts related to the release and exposure of workers and the public to hazardous substances or conditions during construction, operation, and maintenance of CM2–CM11, CM13, CM14, CM16, and CM18 could be significant. Conservation measures implementation would involve extensive use of heavy equipment during construction, and/or the use and/or transport of hazardous chemicals during operations and maintenance (e.g., herbicides for nonnative vegetation control). These chemicals could be inadvertently released, exposing construction workers or the public to hazards. Construction of restoration projects on or near existing agricultural and industrial land may result in a conflict or exposure to known hazardous materials, and the use of high-profile equipment in close proximity to airport runways could result in hazards to air traffic. However, in addition to implementation of SWPPPs, HMMPs, SPCCPs, SAPs, and a FPCP, Mitigation Measures HAZ-1a, HAZ-1b, UT-6a, UT-6c, and TRANS-1a would be implemented, all of which would ensure that these potential impacts are less than significant.

Mitigation Measure HAZ-1a: Perform Preconstruction Surveys, Including Soil and Groundwater Testing, at Known or Suspected Contaminated Areas within the Construction Footprint, and Remediate and/or Contain Contamination

Please refer to Mitigation Measure HAZ-1a under Impact HAZ-1 in the discussion of Alternative 1A.

Mitigation Measure HAZ-1b: Perform Pre-Demolition Surveys for Structures to Be Demolished within the Construction Footprint, Characterize Hazardous Materials and Dispose of Them in Accordance with Applicable Regulations

Please refer to Mitigation Measure HAZ-1b under Impact HAZ-1 in the discussion of Alternative 1A.

Mitigation Measure UT-6a: Verify Locations of Utility Infrastructure

Please see Mitigation Measure UT-6a under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure UT-6c: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Worker and Public Health and Safety

Please see Mitigation Measure UT-6c under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management Plan

Please see Mitigation Measure TRANS-1a under Impact TRANS-1 in the discussion of Alternative 1A in Chapter 19, *Transportation*.

Impact HAZ-8: Increased Risk of Bird–Aircraft Strikes during Implementation of Conservation Measures That Create or Improve Wildlife Habitat

NEPA Effects: The potential for implementation of conservation measures that create or improve wildlife habitat (CM2–CM11) to create hazards air and public safety through increased bird-aircraft strikes would be similar to the potential effects described under Alternative 1A. Potential variation from Alternative 1A would be anticipated to be minor but could result from the selection of different areas for restoration activities based on the location of the physical water conveyance features associated with each alternative. Such variation may result greater or less opportunity for bird-aircraft strikes depending on the location's proximity to airport flight zones. The following airports, because they are in relatively close proximity (within 2 miles) to the ROAs and/or conservation zones could potentially be affected: Travis Air Force Base; Rio Vista Municipal Airport; Funny Farm Airport; Sacramento International Airport, and Byron Airport.

The effect of increased bird-aircraft strikes during implementation of CM2–CM11 would be adverse because it could potentially result in an air and public safety hazard. Mitigation Measure HAZ-8 would reduce the severity of this effect through the development and implementation of measures to reduce, minimize and/or avoid wildlife hazards on air safety. However, this effect is would remain adverse.

CEQA Conclusion: Implementation of CM2–CM11, because they would create or improve wildlife habitat, could potentially attract waterfowl and other birds to areas in proximity to existing airport flight zones, and thereby result in an increase in bird-aircraft strikes, which could result in significant impacts on public safety. The following airports, because they are in relatively close proximity (within 2 miles) to the ROAs and/or conservation zones could potentially be affected: Travis Air Force Base; Rio Vista Municipal Airport; Funny Farm Airport; Sacramento International Airport, and Byron Airport. Mitigation Measure HAZ-8 could reduce the severity of this impact through the ultimate development and implementation of measures to reduce, minimize and/or avoid wildlife hazards on air safety, but not to a less-than-significant level. As such, the impact is significant and unavoidable.

Mitigation Measure HAZ-8: Consult with Individual Airports and USFWS, and Relevant Regulatory Agencies

Please refer to Mitigation Measure HAZ-8 under Impact HAZ-8 in the discussion of Alternative 1A. This mitigation measure will ensure that the potential for increased bird – aircraft strikes as a result of implementing CM2–CM11 in the vicinity of airports are minimized to the greatest extent possible.

24.3.3.11 Alternative 6A—Isolated Conveyance with Pipeline/Tunnel and Intakes 1-5 (15,000 cfs; Operational Scenario D)

Impact HAZ-1: Create a Substantial Hazard to the Public or the Environment through the Release of Hazardous Materials or by Other Means during Construction of the Water Conveyance Facilities

NEPA Effects: Potential hazards to the public or the environment through the routine transport, use, or disposal of hazardous materials during construction of the water conveyance facilities for Alterative 6A would be the same as those described under Alternative 1A. Similarly, potential hazards associated with natural gas accumulation in tunnels, existing contaminants in soil, sediment or groundwater, hazardous constituents present in RTM, infrastructure containing hazardous materials, and routine transportation of hazardous materials would also be the same as under Alternative 1A.

As with Alternative 1A, tunnel construction activities would carry the potential to encounter gases that could enter the tunnels and accumulate to flammable or explosive concentrations. Hazardous constituents associated with RTM are not anticipated; however, the possibility exists for RTM and decanted water to pose a hazard to the construction workers, the public, or the environment. Additionally, stored bulk quantities of hazardous materials that have been released to soils and groundwater could be rereleased during construction, also posing a potential hazard. Water conveyance facilities construction may also require dredging contaminated sediments. Existing infrastructure, including oil and gas wells, also have the potential to release hazardous materials, as would the transport of hazardous materials during facility construction. Additionally, Approximately 204 permanent structures would be removed or relocated within the water conveyance facility footprint under this alternative. This includes approximately 59 residential buildings; 15 recreational structures; 120 storage and agricultural support structures; and 10 other types of structures (e.g., power/utility structures, bridges, and other infrastructure). One fire station in the community of Hood would also be affected. Most of these structures occur within the physical footprints of the intake facilities and their associated conveyance pipelines. These structures may contain hazardous materials in the form of building materials containing asbestos or lead-based paint, stored liquid paints and solvents, and household or industrial-strength maintenance chemicals and cleaners. These materials would require proper handling and disposal. As described for Impact HAZ-1 under Alternative 1A, Mitigation Measure HAZ-1b would be implemented by DWR to ensure that there are no adverse effects related to hazardous materials from structure demolition.

Further, as described for Alternative 1A under Impact HAZ-1, in general, the transportation of hazardous materials via trucks, trains and ships poses potential risks associated with the accidental release of these materials to the environment. Rerouting vehicular traffic carrying hazardous materials during construction of the water conveyance facilities could increase the risk of accidental release due to inferior road quality or lack of driver familiarity with the modified routes. Hazardous

materials transportation routes are presented in Figure 24-2 and in Table 24-4. Routes anticipated to be affected during construction of the water conveyance facilities are described in Chapter 19, *Transportation*. Barges supporting water conveyance facilities construction may also transport hazardous materials such as fuels and lubricants or other chemicals. The potential exists for accidental release of hazardous materials from BDCP-related barges. To avoid effects on the environment related to this issue, BMPs would be implemented as part of a Barge Operations Plan (as discussed under Impact HAZ-1 for Alternative 1A and in Appendix 3B, *Environmental Commitments*) that would reduce the potential for accidental releases of hazardous materials during transport and transfer. Finally, under this alternative, the proposed conveyance crosses under the existing BNSF/Amtrak San Joaquin line between Bacon Island and Woodward Island; however, the effect of this crossing would likely be minimal because the proposed conveyance would traverse the railroad in a deep bore tunnel (see Chapter 19 for discussion). Further, the UPRR runs proximate to the construction area of the proposed Byron Forebay; however, construction is unlikely to disrupt rail service because much of this line has not been in service recently.

As described under Impact HAZ-1 for Alternative 1A, mitigation measures would be in place to ensure that there are no adverse effects on road, rail, or water transportation, and, thus, the potential for the construction of the water conveyance facilities to pose risks related to the transportation of hazardous materials would be minimal. As described in Chapter 19, *Transportation*, under Mitigation Measure TRANS-1a, a site-specific construction traffic management plan, taking into account hazardous materials transportation, would be prepared and implemented prior to initiation of construction of water conveyance facilities. Any potential effects on rail traffic and any hazardous materials transport therein during construction would be reduced with implementation of Mitigation Measure TRANS-1a, which would include stipulations to coordinate with rail providers to develop alternative interim transportation modes (e.g., trucks or buses) that could be used to provide freight and/or passenger service during any longer term railroad closures and daily construction time windows during which construction would be restricted or rail operations would need to be suspended for any activity within railroad rights of way. This would minimize the potential risk of release of hazardous materials being transported via these rails. As noted in the discussion of Impact HAZ-1 under Alternative 1A, project design will minimize, to the extent feasible, the need to acquire or traverse areas where the presence of hazardous materials is suspected or has been verified. Further, environmental commitments would be implemented, including SWPPPs, SPCCPs, SAPs, and HMMPs; a Barge Operations Plan; and chemical characterization of RTM prior to reuse (e.g., RTM in levee reinforcement) or discharge. The environmental commitments would reduce these potential hazards associated with water conveyance facilities construction. Additionally, the implementation of Mitigation Measures HAZ-1a and HAZ-1b, UT-6a and UT-6c (described in Chapter 20, *Public Services and Utilities*), and TRANS-1a (described in Chapter 19, *Transportation*) would further reduce the potential severity of this impact. As such, construction of the water conveyance facilities would not create a substantial hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or the upset/accidental release of these materials. Thus, this effect would not be adverse.

CEQA Conclusion: During construction of the water conveyance facilities the potential would exist for direct significant impacts on construction personnel, the public and/or the environment associated with the routine use of hazardous materials; natural gas accumulation in water conveyance tunnels; the inadvertent release of existing contaminants in soil, groundwater, and sediment, or hazardous materials in existing infrastructure to be removed; disturbance of electrical transmission lines; and hazardous constituents present in RTM. Additionally, there is the potential

for the construction of the proposed water conveyance facility to indirectly result in the release of hazardous materials through the disruption of existing road, rail, and or river hazardous materials transport routes, which, were this to occur, would be considered a significant impact. However, with the implementation of the previously described environmental commitments and Mitigation Measures HAZ-1a and HAZ-1b, UT-6a and UT-6c (described in Chapter 20, *Public Services and Utilities*), and TRANS-1a (described in Chapter 19, *Transportation*), construction of the water conveyance facilities would not create a substantial hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or the upset/accidental release of these materials. As such, these impacts would be less than significant.

Mitigation Measure HAZ-1a: Perform Preconstruction Surveys, Including Soil and Groundwater Testing, at Known or Suspected Contaminated Areas within the Construction Footprint, and Remediate and/or Contain Contamination

Please refer to Mitigation Measure HAZ-1a under Impact HAZ-1 in the discussion of Alternative 1A.

Mitigation Measure HAZ-1b: Perform Pre-Demolition Surveys for Structures to Be Demolished within the Construction Footprint, Characterize Hazardous Materials and Dispose of Them in Accordance with Applicable Regulations

Please refer to Mitigation Measure HAZ-1b under Impact HAZ-1 in the discussion of Alternative 1A.

Mitigation Measure UT-6a: Verify Locations of Utility Infrastructure

Please see Mitigation Measure UT-6a under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure UT-6c: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Worker and Public Health and Safety

Please see Mitigation Measure UT-6c under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management Plan

Please see Mitigation Measure TRANS-1a under Impact TRANS-1 in the discussion of Alternative 1A in Chapter 19, *Transportation*.

Impact HAZ-2: Expose Sensitive Receptors Located within 0.25 Mile of a Construction Site to Hazardous Materials, Substances, or Waste during Construction of the Water Conveyance Facilities

NEPA Effects: An adverse effect may occur if a construction work site is located within 0.25 mile of an existing or proposed school, or other sensitive receptor, and releases hazardous materials that pose a health hazard. However, no schools, parks or hospitals are located within 0.25 mile of Alternative 6A. Therefore, no sensitive receptors would be exposed to hazardous materials, substances, or waste during construction of the water conveyance facilities under Alternative 6A. As

such, there would be no effect. Potential air quality effects on sensitive receptors are discussed in Chapter 22, *Air Quality and Greenhouse Gases.*

***CEQA Conclusion*:** There are no schools, parks or hospitals located within 0.25 mile of the Alternative 6A water conveyance facilities alignment, therefore, there would be no impact due to exposure of sensitive receptors to hazardous materials, substances or waste during construction of the water conveyance facilities. Accordingly, there would be no impact. No mitigation is required. Potential air quality effects on sensitive receptors are discussed in Chapter 22, *Air Quality and Greenhouse Gases.*

Impact HAZ-3: Potential to Conflict with a Known Hazardous Materials Site and, as a Result, Create a Significant Hazard to the Public or the Environment

NEPA Effects: There are no "Cortese List" sites or known SOCs within the construction footprint of Alternative 6A (Table 24-5 and Figure 24-4), and therefore there would be no conflict pertaining to a known hazardous materials site during construction of the water conveyance facilities, and thus, no related hazard to the public or the environment.). For those hazardous materials sites identified within the 0.5-mile radius but which are not within the construction footprint, there would be no potential for construction of the water conveyance facilities to disturb those sites such that there would be a re-release of hazardous materials that would create a hazard for the public or environment. Therefore, the potential for hazards associated with existing SOCs is assumed to be minimal, and as such, there would be no effect. The potential for encountering unknown hazardous materials sites during the course of construction is discussed under Impact HAZ-1.

CEQA Conclusion: Because there are no known SOCs within the construction footprint of the water conveyance facility under this alternative, there would be no conflict with known hazardous materials sites during construction of the water conveyance facilities, and therefore, no related hazard to the public or the environment. As such, there would be no impact. The potential for encountering unknown hazardous materials sites during the course of construction is discussed under Impact HAZ-1.

Impact HAZ-4: Result in a Safety Hazard Associated with an Airport or Private Airstrip within 2 Miles of the Water Conveyance Facilities Footprint for People Residing or Working in the Study Area during Construction of the Water Conveyance Facilities

NEPA Effects: Safety hazards to aircraft posed by high-profile construction equipment, such as cranes and pile drivers, or structures (e.g., proposed transmission lines and towers), would be the same as those described under Alternative 1A. Because the Borges-Clarksburg, Spezia and Walnut Grove Airports (private air facilities) and the Byron Airport (a public air facility) would be located within 2 miles of project features within the construction footprint that may require not only the use of high-profile (200 feet or taller) construction equipment but also the use of helicopters (stringing of a proposed permanent 230 kV transmission line), there could be potential effects on air safety.

However, as required, BDCP proponents would inform Caltrans' Division of Aeronautics in writing prior to construction and would adhere to any recommendations resulting from Caltrans' site investigations, which would ensure that there are no adverse effects on air safety. Further, the BDCP proponents would comply with the recommendations of the OE/AAA (for Byron Airport) (14 CFR 77), as described under Impact HAZ-4 under Alternative 1A. These actions would ensure that there are no adverse effects on air safety.

CEQA Conclusion: The use of helicopters for stringing the proposed 230 kV transmission lines and of high-profile construction equipment (200 feet or taller), such as cranes, for installation of pipelines, placement of concrete fill in intake piles, and removal of cofferdam sheet piles, for example, and potentially pile drivers, such as would be used during the construction of the intakes, have the potential to result in safety hazards to aircraft during takeoff and landing if the equipment is operated too close to runways. Three private airports (Borges-Clarksburg, Spezia, and Walnut Grove Airports) and one public airport (Byron Airport) are located within 2 miles of the construction footprint of Alternative 6A. DWR would coordinate with Caltrans' Division of Aeronautics prior to initiating construction and comply with its recommendations based on its investigation(s), as well comply with the recommendations of the OE/AAA (for Byron Airport). Compliance with these recommendations, which could include limitations necessary to minimize potential problems, such as the use of temporary construction equipment, supplemental notice requirements, and marking and lighting high-profile structures would reduce the potential for impacts on air safety. Accordingly, impacts on air safety would be less than significant. No mitigation is required.

Impact HAZ-5: Expose People or Structures to a Substantial Risk of Property Loss, Personal Injury or Death Involving Wildland Fires, Including Where Wildlands Are adjacent to Urbanized Areas or Where Residences Are Intermixed with Wildlands, as a Result of Construction, and Operation and Maintenance of the Water Conveyance Facilities

NEPA Effects: Hazards related to wildland fires would be similar to those described under Alternative 1A. The northernmost and southernmost extent of this conveyance alignment would be adjacent to zones of moderate fire hazard severity.

As described under Alternative 1A and in Appendix 3B, *Environmental Commitments*, precautions would be taken to prevent wildland fires during construction, and operation and maintenance of the water conveyance facilities in full compliance with Cal-OSHA standards for fire safety and prevention. Additionally, DWR would develop and implement fire safety, prevention and control BMPs as part of a FPCP in coordination with federal, state, and local agencies. Implementation of these would help ensure that people or structures would not be subject to a significant risk of loss, injury or death involving wildland fires. Therefore, this effect would not be adverse.

CEQA Conclusion: People or structures would not be subject to a significant risk of loss, injury or death involving wildland fires during construction or operation and maintenance of the water conveyance facilities because the alternative would comply with Cal-OSHA fire prevention and safety standards; DWR would implement standard fire safety and prevention measures, as part of a FPCP (Appendix 3B, *Environmental Commitments*); and because the water conveyance facilities would not be located in a High or Very High Fire Hazard Severity Zone. Therefore, this impact would be less than significant. No mitigation is required.

Impact HAZ-6: Create a Substantial Hazard to the Public or the Environment through the Release of Hazardous Materials or by Other Means during Operation and Maintenance of the Water Conveyance Facilities

NEPA Effects: Potential hazards related to the long-term operation and maintenance of the water conveyance facilities would be similar to those described for Alternative 1A. Under this alternative, however, the potential for hazards associated with intake pumping plants and sediment basins could be greater, based upon heavier and more frequent use of north Delta intakes under isolated

operational guidelines. This alternative may require the transport, storage, and use of chemicals or hazardous waste materials including fuel, oils, grease, solvents, and paints. Solids collected at solids lagoons and sediment dredged during intake maintenance may contain hazardous constituents (e.g., persistent pesticides, mercury, PCBs). To ensure that potentially contaminated sediment from maintenance dredging activities at the intakes would not adversely affect soil, groundwater or surface water, a SAP would be implemented prior to any dredging activities, as described under Impact HAZ-1 for this alternative. All sediment would be characterized chemically prior to reuse to ensure that reuse of this material would not result in a hazard to the public or the environment.

The locations of airports with respect to the pipeline/tunnel alignment are provided in Figure 24-9. The Borges-Clarksburg, Walnut Grove, and Spezia Airports (all private facilities), and Byron Airport (a public facility) would be located within 2 miles of the Alternative 6A construction footprint (Figure 24-9 and Table 24-6). With the exception of power transmission lines supplying power to pumps, surge towers, and other water conveyance facilities equipment, water conveyance facilities operations and maintenance are not anticipated to require high-profile equipment, the use of which near an airport runway could result in an adverse effect on aircraft. DWR would comply with recommendations of an OE/AAA (for Byron Airport), and would coordinate with Caltrans' Division of Aeronautics prior to initiating maintenance activities requiring high-profile equipment to avoid adverse effects on air safety. Compliance with these recommendations, which could include limitations necessary to minimize potential problems, such as the use of temporary construction equipment, supplemental notice requirements, and marking and lighting high-profile structures would reduce the potential for impacts on air safety.

Potential releases of hazardous materials could result in an adverse effect on workers, the public (including sensitive receptors within 0.25 mile of the water conveyance facilities). There are no sensitive receptors (i.e., schools, hospitals and parks) located within 0.25 mile of Alternative 6A.

Because the types of potentially hazardous materials used during routine operation and maintenance activities would be used in relatively small quantities, and because BMPs, as would be implemented in the SWPPPs, SPCCPs, and HMMPs, would be in place to help prevent the inadvertent release of these materials and to contain and remediate spills should they occur, the risk to the public and environment would be negligible. Further, under Mitigation Measure HAZ-6, solids from the solids lagoons would be sampled and characterized to evaluate disposal options, and disposed of accordingly at an appropriate, licensed facility. These measures would ensure that this effect is not adverse.

***CEQA Conclusion*:** The accidental release of hazardous materials to the environment during operation and maintenance of the water conveyance facilities and the potential interference with air safety through the use of high-profile equipment for maintenance of proposed transmission lines could have impacts on the public and environment. However, implementation of the BMPs and other activities required by SWPPPs, HMMPs, SPCCPs, SAPs, and Mitigation Measure HAZ-6, which would ensure that dewatered solids are not reintroduced to the environment and are properly disposed of, as well as adherence to all applicable FAA regulations (14 CFR Part 77) and coordination/compliance with Caltrans' Division of Aeronautics when performing work with high-profile equipment within 2 miles of an airport, which would include implementation of recommendations to provide supplemental notice and/or equip high-profile structures with marking and lighting, would ensure that operation and maintenance of the water conveyance facilities would not create a substantial hazard to the public, environment or air traffic safety. Therefore, this impact would be less than significant.

Mitigation Measure HAZ-6: Test Dewatered Solids from Solids Lagoons Prior to Reuse and/or Disposal

Please refer to Mitigation Measure HAZ-6 under Impact HAZ-6 in the discussion of Alternative 1A.

Impact HAZ-7: Create a Substantial Hazard to the Public or the Environment through the Release of Hazardous Materials or by Other Means as a Result of Implementing Conservation Measures CM2-CM11, CM13, CM14, CM16 and CM18

NEPA Effects: The potential for construction, operation, and maintenance activities associated with the implementation of conservation measures (CM2–CM11, CM13, CM 14, CM16, and CM18) to create hazards to workers, the public, and the environment would be similar to those described under Alternative 1A. Hazardous materials associated with the operation of construction equipment could be released into the environment in the course of the materials' routine transport, use, or disposal. Releases could also occur as a result of accidental circumstances. Similarly, construction activities could encounter known or unknown hazardous materials sites located on or in the vicinity of construction sites, creating the potential for their disturbance and release. Other activities, including the intentional demolition of existing structures and reuse of spoil, dredged material and/or RTM, would also present the potential to generate hazards or release hazardous materials. However, prior to the reuse of spoils, dredged material or RTM, these materials would undergo chemical characterization, as described in Appendix 3B, *Environmental Commitments*, to ensure that they are not creating a hazard to the public and environment.

Further, other potential hazards that could result from implementing conservation measures include the possible release of hazardous substances in proximity to sensitive receptors; damage or disruption of existing infrastructure such that hazardous conditions were created; the accidental release of hazardous substances during operation and maintenance (e.g., herbicides for nonnative vegetation control); the release, in the short-term, of pesticides from former agricultural lands as a result of wetland and floodplain restoration; the potential for safety hazards related to construction in the vicinity of an airport; and the potential for wildfire hazards in the vicinity of construction sites.

These potential effects, were they to occur, would be adverse. However, with implementation of Mitigation Measures HAZ-1a, HAZ-1b, UT-6a, UT-6c, TRANS-1a, and environmental commitments (discussed previously for Impacts HAZ-1 through HAZ-6 under Alternative 1A, and in detail in Appendix 3B, *Environmental Commitments*), the potential for adverse effects would be reduced. Additionally, the proposed conservation measures would be designed to avoid sensitive receptors and would minimize, to the extent feasible, the need to acquire or traverse areas where the presence of hazardous materials is suspected or has been verified. As such, this effect would not be adverse.

Potential safety hazards to air traffic related to the potential for increased bird-aircraft strikes as a result of creating or enhancing wildlife habitat are discussed under Impact HAZ-8.

***CEQA Conclusion*:** The potential for impacts related to the release and exposure of workers and the public to hazardous substances or conditions during construction, operation, and maintenance of CM2–CM11, CM13, CM14, CM16, and CM18 could be significant. Conservation component implementation would involve extensive use of heavy equipment during construction, and/or the use and/or transport of hazardous chemicals during operations and maintenance (e.g., herbicides for nonnative vegetation control). These chemicals could be inadvertently released and could expose

construction workers or the public to hazards. Construction of restoration projects on or near existing agricultural and industrial land may result in a conflict or exposure to known hazardous materials, and the use of high-profile equipment in close proximity to airport runways could result in hazards to air traffic. However in addition to implementation of SWPPPs, HMMPs, SPCCPs, SAPs, and a FPCP, Mitigation Measures HAZ-1a, HAZ-1b, UT-6a, UT-6c, and TRANS-1a would be implemented, all of which would ensure that these potential impacts are less than significant.

Mitigation Measure HAZ-1a: Perform Preconstruction Surveys, Including Soil and Groundwater Testing, at Known or Suspected Contaminated Areas within the Construction Footprint, and Remediate and/or Contain Contamination

Please refer to Mitigation Measure HAZ-1a under Impact HAZ-1 in the discussion of Alternative 1A.

Mitigation Measure HAZ-1b: Perform Pre-Demolition Surveys for Structures to Be Demolished within the Construction Footprint, Characterize Hazardous Materials and Dispose of Them in Accordance with Applicable Regulations

Please refer to Mitigation Measure HAZ-1b under Impact HAZ-1 in the discussion of Alternative 1A.

Mitigation Measure UT-6a: Verify Locations of Utility Infrastructure

Please see Mitigation Measure UT-6a under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure UT-6c: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Worker and Public Health and Safety

Please see Mitigation Measure UT-6c under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management Plan

Please see Mitigation Measure TRANS-1a under Impact TRANS-1 in the discussion of Alternative 1A in Chapter 19, *Transportation*.

Impact HAZ-8: Increased Risk of Bird–Aircraft Strikes during Implementation of Conservation Measures That Create or Improve Wildlife Habitat

NEPA Effects: The potential for implementation of conservation measures that create or improve wildlife habitat (CM2–CM11) to create hazards air and public safety through increased bird-aircraft strikes would be similar to the potential effects described under Alternative 1A. Potential variation from Alternative 1A would be anticipated to be minor but could result from the selection of different areas for restoration activities based on the location of the physical water conveyance features associated with each alternative. Such variation may result greater or less opportunity for bird-aircraft strikes depending on the location's proximity to airport flight zones. The following airports, because they are in relatively close proximity (within 2 miles) to the ROAs and/or conservation zones could potentially be affected: Travis Air Force Base; Rio Vista Municipal Airport; Funny Farm Airport; Sacramento International Airport, and Byron Airport.

The effect of increased bird-aircraft strikes during implementation of CM2–CM11 would be adverse because it could potentially result in an air and public safety hazard. Mitigation Measure HAZ-8 would reduce the severity of this effect through the development and implementation of measures to reduce, minimize and/or avoid wildlife hazards on air safety. However, this effect is would remain adverse.

CEQA Conclusion: Implementation of CM2–CM11, because they would create or improve wildlife habitat, could potentially attract waterfowl and other birds to areas in proximity to existing airport flight zones, and thereby result in an increase in bird-aircraft strikes, which could result in significant impacts on public safety. The following airports, because they are in relatively close proximity (within 2 miles) to the ROAs and/or conservation zones could potentially be affected: Travis Air Force Base; Rio Vista Municipal Airport; Funny Farm Airport; Sacramento International Airport, and Byron Airport. Mitigation Measure HAZ-8 could reduce the severity of this impact through the ultimate development and implementation of measures to reduce, minimize and/or avoid wildlife hazards on air safety, but not to a less-than-significant level. As such, the impact is significant and unavoidable.

Mitigation Measure HAZ-8: Consult with Individual Airports and USFWS, and Relevant Regulatory Agencies

Please refer to Mitigation Measure HAZ-8 under Impact HAZ-8 in the discussion of Alternative 1A. This mitigation measure will ensure that the potential for increased bird – aircraft strikes as a result of implementing CM2–CM11 in the vicinity of airports are minimized to the greatest extent possible.

24.3.3.12 Alternative 6B—Isolated Conveyance with East Alignment and Intakes 1–5 (15,000 cfs; Operational Scenario D)

Impact HAZ-1: Create a Substantial Hazard to the Public or the Environment through the Release of Hazardous Materials or by Other Means during Construction of the Water Conveyance Facilities

NEPA Effects: Hazards to the public or the environment through the routine transport, use, or disposal of hazardous materials during construction of the water conveyance facilities for Alterative 6B would be the same as those described under Alternative 1B.

As described in Chapter 3, *Description of Alternatives*, during construction of Alternative 1B six locations would be designated as temporary fueling stations. Each fueling station would occupy two acres and each would be located adjacent to a concrete batch plant. Fueling station locations are shown in Figure 24-7. Fueling stations would be established in currently rural areas with two at the intakes on the northern end of the conveyance alignment, three along the length of the canal alignment and one fueling station would be near the pumping facilities on the southern end. Bulk fuel would be stored at fueling stations and potentially pose the risk of vehicle fueling spills and leakage from above-ground storage tanks at fueling stations.

Potential hazards associated with natural gas accumulation in tunnels, existing contaminants in soil, river sediment or groundwater, hazardous constituents present in RTM, infrastructure containing hazardous materials, and the disruption of existing hazardous materials transport routes would be the same as those described under Alternative 1B. Like Alternative 1B, under this alternative, there are 9 overhead power/electrical transmission lines and three natural gas pipelines and five

petroleum product pipelines (Table 24-3), 57 inactive and four active oil or gas wells within the proposed Alternative 6B water conveyance construction footprint (California Department of Water Resources 2010b:13-1).

Existing structures that would need to be removed or relocated are the same as described for Alternative 1B. These structures may contain hazardous materials that would require proper handling and disposal, if demolition is necessary. As described for Impact HAZ-1 under Alternative 1A, Mitigation Measure HAZ-1b would be implemented by DWR to ensure that there are no adverse effects related to hazardous materials from structure demolition. Risks associated with the transportation of hazardous materials via truck, trains, and ships would be similar to those described under Alternative 1A but would occur in different areas. Hazardous materials transportation routes that would be used under this alternative are presented in Figure 24-2 and in Table 24-4. Routes anticipated to be affected during construction of the water conveyance facilities are listed in Chapter 19, *Transportation*. Under Mitigation Measure TRANS-1a, a site-specific construction traffic management plan, taking into account hazardous materials transportation, would be prepared and implemented prior to initiation of construction of water conveyance facilities. This plan would reduce the potential for effects on hazardous materials transportation routes in the study area. Barges supporting water conveyance facilities construction may also transport hazardous materials such as fuels and lubricants or other chemicals. The potential exists for accidental release of hazardous materials from BDCP-related barges. To avoid effects on the environment related to this issue, BMPs would be implemented as part of a Barge Operations Plan (as discussed under Impact HAZ-1 for Alternative 1A and in Appendix 3B, *Environmental Commitments*) that would reduce the potential for accidental releases of hazardous materials during transport and transfer. Further, the Alternative 6B water conveyance facilities alignment would cross one railroad ROW at the BNSF railroad in San Joaquin County near Holt. A culvert siphon would be built at this rail crossing, reducing potential hazards associated with rail transportation. Two segments of a UPRR line would intersect with bridge facilities constructed east of the intake facilities and other construction work areas would be immediately adjacent to an out-of-service UPRR Tracy Subdivision branch line near the California Aqueduct at the southern end of the water conveyance facilities. Because these crossings are in construction work areas, train operations along the BNSF Railway/Amtrak San Joaquin Line could be affected. Additional conflicts could arise if the out-of-service UPRR line were reopened. Mitigation Measure TRANS-1a would include stipulations to coordinate with rail providers to develop alternative interim transportation modes (e.g., trucks or buses) that could be used to provide freight and/or passenger service during any longer term railroad closures and daily construction time windows during which construction would be restricted or rail operations would need to be suspended for any activity within railroad rights of way. This would minimize the potential risk of release of hazardous materials being transported via these rails.

As noted in the discussion of Impact HAZ-1 under Alternative 1A, project design will minimize, to the extent feasible, the need to acquire or traverse areas where the presence of hazardous materials is suspected or has been verified. Further, environmental commitments would be implemented, including SWPPPs, SPCCPs, SAPs, and HMMPs; a Barge Operations Plan; and chemical characterization of RTM prior to reuse (e.g., RTM in levee reinforcement) or discharge. Together, the environmental commitments would reduce these potential hazards associated with water conveyance facilities construction. Additionally, the implementation of Mitigation Measures HAZ-1a and HAZ-1b, UT-6a and UT-6c (described in Chapter 20, *Public Services and Utilities*), and TRANS-1a, TRANS-5a, and TRANS-6 (described in Chapter 19, *Transportation*) would further reduce the

potential severity of this impact. As such, construction of the water conveyance facilities would not create a substantial hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or the upset/accidental release of these materials. Thus, this effect would not be adverse.

CEQA Conclusion: During construction of the water conveyance facilities, the potential would exist for direct significant impacts on construction personnel, the public and/or the environment associated with the routine use of hazardous materials; natural gas accumulation in water conveyance tunnels; the inadvertent release of existing contaminants in soil, sediment and groundwater, or hazardous materials in existing infrastructure to be removed; disturbance of electrical transmission lines; and potentially hazardous constituents present in RTM. Additionally, the potential would exist for the construction of the water conveyance facilities to indirectly result in the release of hazardous materials through the disruption of existing road, rail, or river hazardous materials transport routes, which, were this to occur, would be considered a significant impact. However, with the implementation of the previously described environmental commitments (for Impact HAZ-1 under Alternative 1A) and Mitigation Measures HAZ-1a and HAZ-1b, UT-6a and UT-6c (described in Chapter 20, *Public Services and Utilities*), and TRANS-1a (described in Chapter 19, *Transportation*), construction of the water conveyance facilities would not create a substantial hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or the upset/accidental release of these materials. Accordingly, these impacts would be less than significant.

Mitigation Measure HAZ-1a: Perform Preconstruction Surveys, Including Soil and Groundwater Testing, at Known or Suspected Contaminated Areas within the Construction Footprint, and Remediate and/or Contain Contamination

Please refer to Mitigation Measure HAZ-1a under Impact HAZ-1 in the discussion of Alternative 1A.

Mitigation Measure HAZ-1b: Perform Pre-Demolition Surveys for Structures to Be Demolished within the Construction Footprint, Characterize Hazardous Materials and Dispose of Them in Accordance with Applicable Regulations

Please refer to Mitigation Measure HAZ-1b under Impact HAZ-1 in the discussion of Alternative 1A.

Mitigation Measure UT-6a: Verify Locations of Utility Infrastructure

Please see Mitigation Measure UT-6a under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure UT-6c: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Worker and Public Health and Safety

Please see Mitigation Measure UT-6c under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management Plan

Please see Mitigation Measure TRANS-1a under Impact TRANS-1 in the discussion of Alternative 1A in Chapter 19, *Transportation*.

Impact HAZ-2: Expose Sensitive Receptors Located within 0.25 Mile of a Construction Site to Hazardous Materials, Substances, or Waste during Construction of the Water Conveyance Facilities

NEPA Effects: There are no schools or hospitals within 0.25 mile of Alternative 6B. However, Buckley Cove and Nelson Parks, both in Stockton, are within 0.25 mile of the construction footprint of this alternative. Buckley Cove Park is west of a proposed borrow and/or spoils area across the Stockton Deep Water Ship Channel, and Nelson Park is just north of a proposed temporary 69 kV transmission line. Potential effects related to the handling of hazardous materials as part of construction of the water conveyance facilities would be similar to those described under Impact HAZ-2 for Alternative 1A. Although there would be a risk of accidental spills of hazardous materials (e.g., fuels, solvents, paints) during facility construction, the quantities of hazardous materials likely to be used during construction activities are likely to be small, and were they to be released inadvertently, spills would be localized. Further, BMPs to minimize the potential for the accidental release of hazardous materials and to contain and remediate hazardous spills, as part of the SWPPPs, SPCCPs, and HMMPs, would be implemented, as set forth in Appendix 3B, *Environmental Commitments*. Therefore, it is unlikely people at these parks would be at risk or adversely affected due to exposure of hazardous materials, substances, or waste during construction of the water conveyance facilities. As such, this effect would not be adverse. Potential air quality effects on sensitive receptors are discussed in Chapter 22, *Air Quality and Greenhouse Gases,* and potential EMF effects on sensitive receptors are discussed in Chapter 25, *Public Health.*

***CEQA Conclusion*:** There are no schools or hospitals within 0.25 mile of Alternative 6B. Buckley Cove and Nelson Parks in Stockton are within 0.25 mile of the construction footprint of Alternative 6B. Buckley Cove Park is west of a proposed borrow and/or spoils area across the Stockton Deep Water Ship Channel, and Nelson Park is located just north of a proposed temporary 69 kV transmission line. During construction of the water conveyance facilities under this alternative, there would be a risk of accidental spills of hazardous materials used during construction activities. However, the potential for significant impacts on people at these parks due to these potential inadvertent releases would be negligible because spills would likely be small and localized. Further, BMPs to minimize the potential for the accidental release of hazardous materials and to contain and remediate hazardous spills, as part of the SWPPPs, SPCCPs, and HMMPs, would be implemented, as set forth in Appendix 3B, *Environmental Commitments*. Therefore, people at these parks would not be at risk or affected by exposure to hazardous materials, substances, or waste during construction of the water conveyance facilities, and as such, this impact would be less than significant. Potential air quality effects on sensitive receptors are discussed in Chapter 22, *Air Quality and Greenhouse Gases*, and potential EMF effects on sensitive receptors are discussed in Chapter 25, *Public Health.*

Impact HAZ-3: Potential to Conflict with a Known Hazardous Materials Site and, as a Result, Create a Significant Hazard to the Public or the Environment

NEPA Effects: Effects related to sites on the Cortese List and SOCs would be the same as those described under Alternative 1B. The Sarale Farms site (a "Cortese List" site) and Kinder Morgan

Energy pipeline access station site are located within the construction footprints for proposed temporary 69 kV transmission lines (Table 24-5 and Figure 24-4). At the Sarale Farms site, a 10,000-gallon petroleum UST was removed in 1992. Soil and groundwater contain petroleum products in excess of cleanup standards.

Because construction of the temporary transmission line would not entail deep excavation or require dewatering activities, no conflict with existing hazards at this site are anticipated. However, if dewatering and/or deep excavation were required in this area contaminated groundwater could be drawn up and/or contaminated soils may be disturbed, respectively. Improper disposal of contaminated excavated soils or groundwater would have the potential to adversely affect the environment. To avoid this potential adverse effect, Mitigation Measure HAZ-1a would be implemented to ensure that any known or suspected soil and/or groundwater contamination is not re-released. Further, design of the transmission line, including pole placement, would avoid the Kinder Morgan Energy and Sarale Farms site to the extent practicable to ensure there were no adverse hazardous effects associated with construction on or in close proximity to these sites.

For those hazardous materials sites identified within the 0.5-mile radius of Alternative 6B but which are not within the construction footprint, there would be no potential for the construction of the water conveyance facilities to disturb those sites such that there would be a re-release of hazardous materials that would create a hazard for the public or environment. Therefore, there would be no adverse effect. The potential for encountering unknown hazardous materials sites during the course of construction is discussed under Impact HAZ-1, above.

***CEQA Conclusion*:** The re-release of hazardous materials during construction activities (dewatering and/or deep excavation) at the Sarale Farms site or the Kinder Morgan Energy pipeline access station site within the construction footprints for proposed temporary 69 kV transmission lines could result in a significant impact. However, a significant impact on the environment would be avoided with implementation of Mitigation Measure HAZ-1a. Further, project design would minimize, to the extent feasible, the need traverse areas where the presence of hazardous materials is suspected or has been verified, or where interference with existing infrastructure might result in hazards. As a result, there would be a less than significant impact on the public and/or environment under Alternative 6B because construction of the water conveyance facilities near the Kinder Morgan Energy pipeline access station site and the Sarale Farms site would not result in hazardous materials releases from these sites. The potential for encountering other unknown hazardous materials sites during the course of construction is discussed under Impact HAZ-1, above.

Mitigation Measure HAZ-1a: Perform Preconstruction Surveys, Including Soil and Groundwater Testing, at Known or Suspected Contaminated Areas within the Construction Footprint, and Remediate and/or Contain Contamination

Please refer to Mitigation Measure HAZ-1a under Impact HAZ-1 in the discussion of Alternative 1A.

Impact HAZ-4: Result in a Safety Hazard Associated with an Airport or Private Airstrip within 2 Miles of the Water Conveyance Facilities Footprint for People Residing or Working in the Study Area during Construction of the Water Conveyance Facilities

NEPA Effects: Potential effects on air safety under this alternative would be the same as Alternative 1B. The Borges-Clarksburg Airport, Byron Airport, and Lost Isle Seaplane Base are within 2 miles of the Alternative 6B water conveyance facilities (Figure 24-9). The Borges-Clarksburg Airport is a

private, special use airport with a land use plan. The Lost Isle Seaplane Base and Byron Airport are designated as a public use airports and are subject to FAA regulations (14 CFR 77) regarding construction within 10,000 feet. Construction of a state building or enclosure within 2 miles of any airport is subject to review of Caltrans' Division of Aeronautics for safety and noise effects. In the event final locations for any state building or enclosure would be within 2 miles of any airport, Caltrans' Division of Aeronautics would require written notification and a review would be performed. DWR would adhere to any recommendations resulting from this review. Additionally, depending on the location and height of any high-profile construction equipment, the Lost Isle Seaplane Base and Byron Airport, because they are public air facilities, may be subject to an OE/AAA (14 CFR 77) to be performed by the FAA. Compliance with the results of the OE/AAA would reduce the risk of adverse effects on air traffic in the vicinity of these public airports. Thus, there would be no adverse effects on air safety.

CEQA Conclusion: The use of helicopters for stringing the proposed 230 kV transmission lines and of high-profile construction equipment (200 feet or taller), such as cranes, for installation of pipelines, placement of concrete fill in intake piles, and removal of cofferdam sheet piles, for example, and potentially pile drivers, such as would be used during the construction of the intakes, have the potential to result in safety hazards to aircraft during takeoff and landing if the equipment is operated too close to runways. Two public airports (Lost Isle Seaplane Base and Byron Airport) and one private airport (Borges-Clarksburg Airport) are located within 2 miles of the construction footprint of Alternative 6B. DWR would coordinate with Caltrans' Division of Aeronautics prior to initiating construction and comply with its recommendations based on its investigation(s), as well comply with the recommendations of the OE/AAA (for Byron Airport and the Lost Isle Seaplane Base). Compliance with these recommendations, which could include limitations necessary to minimize potential problems, such as the use of temporary construction equipment, supplemental notice requirements, and marking and lighting high-profile structures would reduce the potential for impacts on air safety. Accordingly, impacts on air safety would be less than significant. No mitigation is required.

Impact HAZ-5: Expose People or Structures to a Substantial Risk of Property Loss, Personal Injury or Death Involving Wildland Fires, Including Where Wildlands Are adjacent to Urbanized Areas or Where Residences Are Intermixed with Wildlands, as a Result of Construction, and Operation and Maintenance of the Water Conveyance Facilities

NEPA Effects: Hazards related to wildland fires would be similar to those described under Alternative 1B. The northernmost and southernmost extent of this conveyance alignment would be adjacent to zones of moderate fire hazard severity (Figure 24-10).

As described under Alternative 1A and in Appendix 3B, *Environmental Commitments*, precautions would be taken to prevent wildland fires during construction, and operation and maintenance of the water conveyance facilities in full compliance with Cal-OSHA standards for fire safety and prevention. Additionally, DWR would develop and implement fire safety, prevention and control BMPs as part of a FPCP in coordination with federal, state, and local agencies. Implementation of these would help ensure that people or structures would not be subject to a significant risk of loss, injury or death involving wildland fires. Therefore, this effect would not be adverse.

CEQA Conclusion: People or structures would not be subject to a significant risk of loss, injury or death involving wildland fires during construction or operation and maintenance of the water conveyance facilities because the alternative would comply with Cal-OSHA fire prevention and

safety standards; DWR would implement standard fire safety and prevention measures, as part of a FPCP (Appendix 3B, *Environmental Commitments*); and because the water conveyance facilities would not be located in a High or Very High Fire Hazard Severity Zone. Therefore, this impact would be less than significant. No mitigation is required.

Impact HAZ-6: Create a Substantial Hazard to the Public or the Environment through the Release of Hazardous Materials or by Other Means during Operation and Maintenance of the Water Conveyance Facilities

NEPA Effects: Potential hazards related to the long-term operation and maintenance of the water conveyance facilities would be similar to those described for Alternative 1B. Under Alternative 6B, however, the potential for hazards associated with intake pumping plants and sediment basins could be greater, based upon heavier and more frequent use of north Delta intakes under isolated operational guidelines. This alternative may require the transport, storage, and use of chemicals or hazardous waste materials including fuel, oils, grease, solvents, and paints. Solids collected at solids lagoons and sediment dredged during intake maintenance may contain hazardous constituents (e.g., persistent pesticides, mercury, PCBs). To ensure that potentially contaminated sediment from maintenance dredging activities at the intakes would not adversely affect soil, groundwater or surface water, a SAP would be implemented prior to any dredging activities, as described under Impact HAZ-1 for this alternative. All sediment would be characterized chemically prior to reuse to ensure that reuse of this material would not result in a hazard to the public or the environment.

As noted above, the Borges-Clarksburg Airport, Byron Airport, and Lost Isle Seaplane Base would be within 2 miles of the Alternative 6B water conveyance facilities. With the exception of the proposed power transmission lines and towers, water conveyance facilities are not anticipated to require the use of high-profile equipment during operations and maintenance. Depending on the location and height of equipment necessary for transmission line maintenance, the Lost Isle Seaplane Base and Byron Airport, because they are public air facilities, would be subject to an OE/AAA (14 CFR 77) to be performed by the FAA. (14 CFR 77) regarding potential obstructions to air navigation within 2 miles of an airport. Additionally, DWR would coordinate Caltrans' Division of Aeronautics prior to any maintenance activities requiring high-profile maintenance equipment to ensure that there is no safety conflict with air traffic. Compliance with these recommendations, which could include limitations necessary to minimize potential problems, such as the use of temporary construction equipment, supplemental notice requirements, and marking and lighting high-profile structures would reduce the potential for impacts on air safety.

As described under Alternative 1B, potential releases of hazardous materials associated with operation and maintenance of the water conveyance facilities under Alternative 6B could result in an adverse effect on workers, the public (including sensitive receptors within 0.25 mile of the construction footprint), and the environment. As indicated above under Impact HAZ-2 for this alternative, Buckley Cove and Nelson Parks in Stockton are within 0.25 mile of a proposed borrow/spoils area and a proposed temporary 69 kV transmission line, respectively. Because the proposed 69 kV transmission line is temporary, it would be removed following completion of the water conveyance facilities, and therefore no maintenance activities would occur in this area. No maintenance activities would take place in the borrow/spoils area, per se; however, should the spoils be used at some later time, heavy construction equipment such as dump trucks and excavators would be needed to move the spoils. Consequently, there could be the potential for oil leakage from these vehicles. Although there would be a risk of accidental spills of hazardous materials (e.g., fuels, solvents, paints) during facility operation and maintenance, the quantities of

hazardous materials likely to be used during routine operations and maintenance are likely to be small. Were hazardous materials to be released inadvertently, they would be localized. Further, BMPs to minimize the potential for the accidental release of hazardous materials and to contain and remediate hazardous spills, as part of the SWPPPs, SPCCPs, and HMMPs, would be implemented, as set forth in Appendix 3B, *Environmental Commitments*. Therefore, it is unlikely that park visitors would be at risk or adversely affected.

In addition, under Mitigation Measure HAZ-6, solids from the solids lagoons, which could contain hazardous constituents such as persistent pesticides and mercury, would be sampled and characterized to evaluate disposal options, and disposed of accordingly at an appropriate, licensed facility in order to avoid adverse effects on the environment from potential contamination.

***CEQA Conclusion*:** The accidental release of hazardous materials to the environment during operation and maintenance of the water conveyance facilities and the potential interference with air safety through the use of high-profile equipment for maintenance of proposed transmission lines could have impacts on the public and environment. However, implementation of the BMPs and other activities required by SWPPPs, HMMPs, SPCCPs, SAPs, and Mitigation Measure HAZ-6, which would ensure that dewatered solids are not reintroduced to the environment and are properly disposed of, as well as adherence to all applicable FAA regulations (14 CFR Part 77) and coordination/compliance with Caltrans' Division of Aeronautics when performing work with high-profile equipment within 2 miles of an airport, which would include implementation of recommendations to provide supplemental notice and/or equip high-profile structures with marking and lighting, would ensure that operation and maintenance of the water conveyance facilities would not create a substantial hazard to the public, environment or air traffic safety. Therefore, this impact would be less than significant.

Mitigation Measure HAZ-6: Test Dewatered Solids from Solids Lagoons Prior to Reuse and/or Disposal

Please refer to Mitigation Measure HAZ-6 under Impact HAZ-6 in the discussion of Alternative 1A.

Impact HAZ-7: Create a Substantial Hazard to the Public or the Environment through the Release of Hazardous Materials or by Other Means as a Result of Implementing Conservation Measures CM2-CM11, CM13, CM14, CM16 and CM18

NEPA Effects: The potential for construction, operation, and maintenance activities associated with the implementation of conservation measures (CM2–CM11, CM13, CM 14, CM16, and CM18) to create hazards to workers, the public, and the environment would be similar to those described under Alternative 1A. Potential variation from Alternative 1A would be anticipated to be minor but could result from the selection of different areas for restoration activities based on the location of the physical water conveyance features associated with each alternative.

Hazardous materials associated with the operation of construction equipment could be released into the environment in the course of the materials' routine transport, use, or disposal. Releases could also occur as a result of accidental circumstances. Similarly, construction activities could encounter known or unknown hazardous materials sites located on or in the vicinity of construction sites, creating the potential for their disturbance and release. Other activities, including the intentional demolition of existing structures (e.g., buildings) and reuse of spoil, dredged material and/or RTM, would also present the potential to generate hazards or release hazardous materials. However, prior

to the reuse of spoils, dredged material or RTM, these materials would undergo chemical characterization, as described in Appendix 3B, *Environmental Commitments*, to ensure that they are not creating a hazard to the public and environment.

Further, other potential hazards that could result from implementing conservation measures include the possible release of hazardous substances in proximity to sensitive receptors the accidental release of hazardous substances during operation and maintenance (e.g., herbicides for nonnative vegetation control); the release, in the short-term, of pesticides from former agricultural lands as a result of wetland and floodplain restoration; damage or disruption of existing infrastructure such that hazardous conditions were created the potential for safety hazards related to construction in the vicinity of an airport; and the potential for wildfire hazards in the vicinity of construction sites.

These potential effects, were they to occur, would be adverse. However, with implementation of Mitigation Measures HAZ-1a, HAZ-1b, UT-6a, UT-6c, TRANS-1a, and environmental commitments (discussed previously for Impacts HAZ-1 through HAZ-6, and in detail in Appendix 3B, *Environmental Commitments*), the potential for adverse effects would be reduced. Additionally, the proposed conservation measures would be designed to avoid sensitive receptors and would minimize, to the extent feasible, the need to acquire or traverse areas where the presence of hazardous materials is suspected or has been verified. Thus, this effect would not be adverse.

Potential safety hazards to air traffic related to the potential for increased bird-aircraft strikes as a result of creating or enhancing wildlife habitat are discussed under Impact HAZ-8.

***CEQA Conclusion*:** The potential for impacts related to the release and exposure of workers and the public to hazardous substances or conditions during construction, operation, and maintenance of CM2–CM11, CM13, CM14, CM16, and CM18 could be significant. Conservation component implementation would involve extensive use of heavy equipment during construction, and/or the use and/or transport of hazardous chemicals during operations and maintenance (e.g., herbicides for nonnative vegetation control). These chemicals could be inadvertently released, exposing construction workers or the public to hazards. Construction of restoration projects on or near existing agricultural and industrial land may result in a conflict or exposure to known hazardous materials, and the use of high-profile equipment in close proximity to airport runways could result in hazards to air traffic. However in addition to implementation of SWPPPs, HMMPs, SPCCPs, SAPs, and a FPCP, Mitigation Measures HAZ-1a, HAZ-1b, UT-6a, UT-6c, and TRANS-1a would be implemented, all of which would ensure that these potential impacts are less than significant.

Mitigation Measure HAZ-1a: Perform Preconstruction Surveys, Including Soil and Groundwater Testing, at Known or Suspected Contaminated Areas within the Construction Footprint, and Remediate and/or Contain Contamination

Please refer to Mitigation Measure HAZ-1a under Impact HAZ-1 in the discussion of Alternative 1A.

Mitigation Measure HAZ-1b: Perform Pre-Demolition Surveys for Structures to Be Demolished within the Construction Footprint, Characterize Hazardous Materials and Dispose of Them in Accordance with Applicable Regulations

Please refer to Mitigation Measure HAZ-1b under Impact HAZ-1 in the discussion of Alternative 1A.

Mitigation Measure UT-6a: Verify Locations of Utility Infrastructure

Please see Mitigation Measure UT-6a under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure UT-6c: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Worker and Public Health and Safety

Please see Mitigation Measure UT-6c under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management Plan

Please see Mitigation Measure TRANS-1a under Impact TRANS-1 in the discussion of Alternative 1A in Chapter 19, *Transportation*.

Impact HAZ-8: Increased Risk of Bird–Aircraft Strikes during Implementation of Conservation Measures That Create or Improve Wildlife Habitat

NEPA Effects: The potential for implementation of conservation measures that create or improve wildlife habitat (CM2–CM11) to create hazards air and public safety through increased bird-aircraft strikes would be similar to the potential effects described under Alternative 1A. Potential variation from Alternative 1A would be anticipated to be minor but could result from the selection of different areas for restoration activities based on the location of the physical water conveyance features associated with each alternative. Such variation may result greater or less opportunity for bird-aircraft strikes depending on the location's proximity to airport flight zones. The following airports, because they are in relatively close proximity (within 2 miles) to the ROAs and/or conservation zones could potentially be affected: Travis Air Force Base; Rio Vista Municipal Airport; Funny Farm Airport; Sacramento International Airport, and Byron Airport.

The effect of increased bird-aircraft strikes during implementation of CM2–CM11 would be adverse because it could potentially result in an air and public safety hazard. Mitigation Measure HAZ-8 would reduce the severity of this effect through the development and implementation of measures to reduce, minimize and/or avoid wildlife hazards on air safety. However, this effect is would remain adverse.

CEQA Conclusion: Implementation of CM2–CM11, because they would create or improve wildlife habitat, could potentially attract waterfowl and other birds to areas in proximity to existing airport flight zones, and thereby result in an increase in bird-aircraft strikes, which could result in significant impacts on public safety. The following airports, because they are in relatively close proximity (within 2 miles) to the ROAs and/or conservation zones could potentially be affected: Travis Air Force Base; Rio Vista Municipal Airport; Funny Farm Airport; Sacramento International Airport, and Byron Airport. Mitigation Measure HAZ-8 could reduce the severity of this impact through the ultimate development and implementation of measures to reduce, minimize and/or avoid wildlife hazards on air safety, but not to a less-than-significant level. As such, the impact is significant and unavoidable.

Mitigation Measure HAZ-8: Consult with Individual Airports and USFWS, and Relevant Regulatory Agencies

Please refer to Mitigation Measure HAZ-8 under Impact HAZ-8 in the discussion of Alternative 1A. This mitigation measure will ensure that the potential for increased bird – aircraft strikes as a result of implementing CM2–CM11 in the vicinity of airports are minimized to the greatest extent possible.

24.3.3.13 Alternative 6C—Isolated Conveyance with West Alignment and Intakes W1–W5 (15,000 cfs; Operational Scenario D)

Impact HAZ-1: Create a Substantial Hazard to the Public or the Environment through the Release of Hazardous Materials or by Other Means during Construction of the Water Conveyance Facilities

NEPA Effects: For the duration of construction of the water conveyance facilities, potential hazards associated with the routine use of hazardous materials; natural gas accumulation in tunnels; existing contaminants in soil, groundwater, or sediment; hazardous constituents present in RTM; infrastructure containing hazardous materials; and the routine transport of hazardous materials would be identical to those described under Alternative 1C.

Construction of the water conveyance facilities would create the potential for direct adverse effects on construction personnel, the public and/or the environment associated with the routine use of hazardous materials; natural gas accumulation in water conveyance tunnels; the inadvertent release of existing contaminants in soil, groundwater, and sediment, or hazardous materials in existing structures to be removed or relocated; disturbance of electrical transmission lines or other infrastructure; and hazardous constituents present in RTM. Additionally, there is the potential for the construction of the water conveyance facilities to indirectly result in the release of hazardous materials through the disruption of existing road, rail, and/or river hazardous materials transport routes, which, were this to occur, would be considered an adverse effect.

As noted in the discussion of Impact HAZ-1 under Alternative 1A, project design will minimize, to the extent feasible, the need to acquire or traverse areas where the presence of hazardous materials is suspected or has been verified environmental commitments would be implemented, including, but not limited to SWPPPs, SPCCPs, SAPs, and HMMPs; a Barge Operations Plan; and chemical characterization of RTM prior to reuse (e.g., RTM in levee reinforcement) or discharge. Together, the environmental commitments would reduce these potential hazards associated with water conveyance facilities construction. Additionally, the implementation of Mitigation Measures HAZ-1a and HAZ-1b, UT-6a and UT-6c (described in Chapter 20, *Public Services and Utilities*), and TRANS-1a (described in Chapter 19, *Transportation*) would further reduce the potential severity of this impact. As such, construction of the water conveyance facilities would not create a substantial hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or the upset/accidental release of these materials. Thus, this effect would not be adverse.

CEQA Conclusion: During construction of the water conveyance facilities, the potential would exist for direct significant impacts on construction personnel, the public, and the environment associated with the routine use of hazardous materials; natural gas accumulation in water conveyance tunnels; the inadvertent release of existing contaminants in soil, sediment and groundwater, or hazardous materials in existing infrastructure to be removed; disturbance of electrical transmission lines; and

hazardous constituents present in RTM. Additionally, the potential would exist for the construction of the water conveyance facilities to indirectly result in the release of hazardous materials through the disruption of existing road, rail, and or river hazardous materials transport routes, which, were this to occur, would be considered a significant impact. However, with the implementation of the previously described environmental commitments and Mitigation Measures HAZ-1a and HAZ-1b, UT-6a and UT-6c (described in Chapter 20, *Public Services and Utilities*), and TRANS-1a (described in Chapter 19, *Transportation*), construction of the water conveyance facilities would not create a substantial hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or the upset/accidental release of these materials. As such, these impacts would be less than significant.

Mitigation Measure HAZ-1a: Perform Preconstruction Surveys, Including Soil and Groundwater Testing, at Known or Suspected Contaminated Areas within the Construction Footprint, and Remediate and/or Contain Contamination

Please refer to Mitigation Measure HAZ-1a under Impact HAZ-1 in the discussion of Alternative 1A.

Mitigation Measure HAZ-1b: Perform Pre-Demolition Surveys for Structures to Be Demolished within the Construction Footprint, Characterize Hazardous Materials and Dispose of Them in Accordance with Applicable Regulations

Please refer to Mitigation Measure HAZ-1b under Impact HAZ-1 in the discussion of Alternative 1A.

Mitigation Measure UT-6a: Verify Locations of Utility Infrastructure

Please see Mitigation Measure UT-6a under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure UT-6c: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Worker and Public Health and Safety

Please see Mitigation Measure UT-6c under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management Plan

Please see Mitigation Measure TRANS-1a under Impact TRANS-1 in the discussion of Alternative 1A in Chapter 19, *Transportation*.

Impact HAZ-2: Expose Sensitive Receptors Located within 0.25 Mile of a Construction Site to Hazardous Materials, Substances, or Waste during Construction of the Water Conveyance Facilities

NEPA Effects: Potential effects related to the handling of hazardous materials as part of construction of the water conveyance facilities would be similar to those described under Impact HAZ-2 for Alternative 1C. There are no hospitals located within 0.25 mile of Alternative 6C. However, as shown in Figure 24-8, Lakewood Drive, Sycamore Drive, and Summer Lake Community Parks in Oakley, and Mokelumne High (Continuation) School in Courtland would be within 0.25 mile of the construction

footprint for this alternative. Sycamore Drive Park would be near a tunnel work area, and Lakewood Drive and Summer Lake Community Parks, and Mokelumne High (Continuation) School would be near the proposed transmission line construction footprint.

Although there would be a risk of accidental spills of hazardous materials (e.g., fuels, solvents, paints) during facility construction, the quantities of hazardous materials likely to be used during construction activities are likely to be small. Were hazardous materials to be released inadvertently, spills would be localized. Further, BMPs to minimize the potential for the accidental release of hazardous materials and to contain and remediate hazardous spills, as part of the SWPPPs, SPCCPs, and HMMPs, would be implemented, as set forth in Appendix 3B, *Environmental Commitments*. Therefore, it is unlikely that these sensitive receptors would be at risk or adversely affected because they would not be exposed to hazardous materials, substances, or waste during construction of the water conveyance facilities. As such, there would be no adverse effect. Potential air quality effects on sensitive receptors are discussed in Chapter 22, *Air Quality and Greenhouse Gases.*

CEQA Conclusion: Lakewood Drive, Sycamore Drive, and Summer Lake Community Parks in Oakley, and Mokelumne High (Continuation) School in Courtland, are within 0.25 mile of the construction footprint of Alternative 6C. During construction of the water conveyance facilities under this alternative, there could be a risk of accidental spills of hazardous materials used during construction activities. However, the potential for significant impacts on people at these three parks and school due to these potential inadvertent releases would be negligible because spills would likely be small and localized. Further, BMPs to minimize the potential for the accidental release of hazardous materials and to contain and remediate hazardous spills, as part of the SWPPPs, SPCCPs, and HMMPs, would be implemented, as set forth in Appendix 3B, *Environmental Commitments*. Therefore, because these sensitive receptors would not be exposed to hazardous materials, substances, or waste during construction of the water conveyance facilities, this impact would be less than significant. No mitigation is required. Potential air quality effects on sensitive receptors are discussed in Chapter 22, *Air Quality and Greenhouse Gases.*

Impact HAZ-3: Potential to Conflict with a Known Hazardous Materials Site and, as a Result, Create a Significant Hazard to the Public or the Environment

NEPA Effects: Effects related to sites on the "Cortese List" would be the same as those described under Alternative 1C. There are no "Cortese List" sites within the construction footprint of the Alternative 6C water conveyance facilities. However, as indicated in Table 24-5, Mill Site A, the site of a former large agricultural mill, would be located in a proposed borrow and/or spoils area within the construction footprint of this alternative. This site was identified as a SOC in the 2009 ISA. However, there is no regulatory listing for this site, and no known hazardous materials occur at this site within the Alternative 6C construction footprint (Figure 24-4). Consequently, the potential to conflict with hazardous materials at this site is assumed to be minimal, and as such, there will be no significant hazard to the public or the environment due to construction of the water conveyance facilities. Therefore, this effect would not be adverse.

For those hazardous materials sites identified within the 0.5-mile radius but which are not within the construction footprint, there would be no potential for construction of the water conveyance facilities to disturb those sites such that there would be a re-release of hazardous materials that would create a hazard for the public or environment. The potential for encountering unknown hazardous materials sites during the course of construction is discussed under Impact HAZ-1.

CEQA Conclusion: Mill Site A, the site of a former large agricultural mill, would be located in a potential borrow and/or spoils area within the construction footprint of this alternative. There is no regulatory listing for this site, and no known hazardous materials occur at this site. Therefore, the potential risk to conflict with hazardous materials at this site is negligible, and there would be no significant hazard to the public or the environment, and, as such, this impact would be less than significant. No mitigation is required. The potential for encountering unknown hazardous materials sites during the course of construction is discussed under Impact HAZ-1.

Impact HAZ-4: Result in a Safety Hazard Associated with an Airport or Private Airstrip within 2 Miles of the Water Conveyance Facilities Footprint for People Residing or Working in the Study Area during Construction of the Water Conveyance Facilities

NEPA Effects: Safety hazards related to air traffic would be the same as those described for Alternative 1C. Under Alternative 6C, the water conveyance facilities would be within 2 miles of the Delta Air Park, Funny Farm Airport, and Borges-Clarksburg Airport, all private facilities, and Byron Airport (a public air facility), as shown in Figure 24-9. The use of helicopters for stringing the proposed 230 kV transmission lines and of high-profile construction equipment (200 feet or taller), such as cranes, for installation of pipelines, placement of concrete fill in intake piles, and removal of cofferdam sheet piles, for example, and potentially pile drivers, such as would be used during the construction of the intakes, have the potential to result in safety hazards to aircraft during takeoff and landing if the equipment is operated too close to runways. Depending on the location and height of any high-profile construction equipment or structures relative to the Byron Airport, because it is a public air facility, the BDCP may be subject to an OE/AAA to be performed by the FAA, as discussed under Impact HAZ-4 for Alternative 1A. Compliance with the results of the OE/AAA (14 CFR Part 77), would reduce the risk of adverse effects on air traffic safety due to water conveyance facility construction activities in the vicinity of this airport. In addition, the Caltrans' Division of Aeronautics would be informed in writing, as discussed under Impact HAZ-4 for Alternative 1A, and DWR would comply with Caltrans' recommendations to avoid any adverse effects on air safety. Consequently, there would be no adverse effect on air safety during construction of the water conveyance facilities.

***CEQA Conclusion*:** The Delta Air Park, Funny Farm Airport, and Borges-Clarksburg Airport, all private airstrips, and Byron Airport, a public air facility, would be within 2 miles of the construction footprint of several proposed water conveyance facilities features, as well as associated work areas for Alternative 6C. The use of helicopters for stringing the proposed 230 kV transmission lines and of high-profile construction equipment (200 feet or taller), such as cranes, for installation of pipelines, placement of concrete fill in intake piles, and removal of cofferdam sheet piles, for example, and potentially pile drivers, such as would be used during the construction of the intakes, have the potential to result in safety hazards to aircraft during takeoff and landing if the equipment is operated too close to runways. DWR would coordinate with Caltrans' Division of Aeronautics prior to initiating construction and comply with its recommendations based their review, as well comply with the recommendations of the OE/AAA (for Byron Airport). Compliance with these recommendations, which could include limitations necessary to minimize potential problems, such as the use of temporary construction equipment, supplemental notice requirements, and marking and lighting high-profile structures would reduce the potential for impacts on air safety. Accordingly, the impacts on air safety would be less than significant. No mitigation is required.

Impact HAZ-5: Expose People or Structures to a Substantial Risk of Property Loss, Personal Injury or Death Involving Wildland Fires, Including Where Wildlands Are adjacent to

Urbanized Areas or Where Residences Are Intermixed with Wildlands, as a Result of Construction, and Operation and Maintenance of the Water Conveyance Facilities

NEPA Effects: Potential hazards related to wildland fire would be similar to those described under Alternative 1C. As shown in Figure 24-10, no portion of Alternative 6C is located in or near an area designated as a High or Very High Fire Hazard Severity Zone. The northernmost and southernmost portions of Alternative 6C would be located near Moderate Fire Hazard Severity Zones.

As described in Appendix 3B, *Environmental Commitments*, precautions would be taken to prevent wildland fires during construction, and operation and maintenance of the water conveyance facilities. Specifically, in an effort to reduce the potential for fire hazards, DWR and/or contractors would develop and implement fire safety, prevention and control measures as part of a FPCP in coordination with federal, state, and local agencies. Development and implementation of the FPCP would help ensure that people or structures would not be subject to a significant risk of loss, injury or death involving wildland fires. Therefore, this effect would not be adverse.

CEQA Conclusion: People or structures would not be subject to a significant risk of loss, injury or death involving wildland fires during construction or operation and maintenance of the water conveyance facilities because the alternative would comply with Cal-OSHA fire prevention and safety standards; DWR would implement standard fire safety and prevention measures, as part of a FPCP (Appendix 3B, *Environmental Commitments*); and because the water conveyance facilities would not be located in a High or Very High Fire Hazard Severity Zone. Therefore, this impact would be less than significant. No mitigation is required.

Impact HAZ-6: Create a Substantial Hazard to the Public or the Environment through the Release of Hazardous Materials or Other Means during Operation and Maintenance of the Water Conveyance Facilities

Potential hazards related to the long-term operation and maintenance of the proposed water conveyance facilities would be similar to those described for Alternative 1C. Under this alternative, however, the potential for hazards associated with intake pumping plants and sediment basins could be greater, based upon heavier and more frequent use of north Delta intakes under isolated operational guidelines. This alternative may require the transport, storage, and use of chemicals or hazardous waste materials including fuel, oils, grease, solvents, and paints. Solids collected at solids lagoons and sediment dredged during intake maintenance may contain hazardous constituents (e.g., persistent pesticides, mercury, PCBs).

Delta Air Park, Byron Airport, Funny Farm and Borges-Clarksburg Airport are within 2 miles of the Alternative 6C construction footprint, as described under Alternative 1C. With the exception of power transmission lines supplying power to pumps and other equipment used for operation and maintenance of the alternative, water conveyance operations and maintenance are not anticipated to require high-profile equipment, the use of which near an airport could result in an adverse effect to aircraft. DWR would adhere to all applicable FAA regulations (14 CFR 77) and would coordinate with Caltrans' Division of Aeronautics prior to any maintenance activities requiring high-profile maintenance equipment and comply with any recommendation Caltrans may have to ensure that there is no conflict with or adverse effect on air traffic.

As previously discussed under Impact HAZ-2, Lakewood Drive, Sycamore Drive, and Summer Lake Community Parks in Oakley, and Mokelumne High (Continuation) School in Courtland would be within 0.25 mile of the construction footprint for Alternative 6C. Should hazardous materials be

inadvertently released in substantially quantities during routine operations and maintenance at the constructed facilities due to improper handling, there would be a potential risk to the public (including sensitive receptors). However, because the types of potentially hazardous materials used during routine operation and maintenance activities would be used in relatively small quantities, and because BMPs, as would be implemented in the SWPPPs, SPCCPs, and HMMPs (as described in Appendix 3B), would be in place to help prevent the inadvertent release of these materials and to contain and remediate spills should they occur, the risk to sensitive receptors within 0.25 mile of the construction footprint for this alternative would be negligible. In addition, under Mitigation Measure HAZ-6, solids from the solids lagoons, which could contain hazardous constituents such as persistent pesticides and mercury, would be sampled and characterized to evaluate disposal options, and disposed of accordingly at an appropriate, licensed facility. As such, no adverse effects on sensitive receptors as a result of hazards or hazardous materials are anticipated.

***CEQA Conclusion*:** The accidental release of hazardous materials to the environment during operation and maintenance of the water conveyance facilities and interference with air traffic safety would potentially be a significant impact on the public and environment. However, implementation of SWPPPs, SPCCPs, HMMPs, and Mitigation Measure HAZ-6, as well as adherence to all applicable FAA regulations and coordination/compliance with Caltrans' Division of Aeronautics when performing work with high-profile equipment within 2 miles of an airport, would ensure that this impact would be less than significant.

Mitigation Measure HAZ-6: Test Dewatered Solids from Solids Lagoons Prior to Reuse and/or Disposal

Please refer to Mitigation Measure HAZ-6 under Impact HAZ-6 in the discussion of Alternative 1A.

Impact HAZ-7: Create a Substantial Hazard to the Public or the Environment through the Release of Hazardous Materials or by Other Means as a Result of Implementing Conservation Measures CM2-CM11, CM13, CM14, CM16 and CM18

NEPA Effects: The potential for construction, operation, and maintenance activities associated with the implementation of conservation measures (CM2–CM11, CM13, CM 14, CM16, and CM18) to create hazards to workers, the public, and the environment would be similar to those described under Alternative 1A. Potential variation from Alternative 1A would be anticipated to be minor but could result from the selection of different areas for restoration activities based on the location of the physical water conveyance features associated with each alternative.

Hazardous materials associated with the operation of construction equipment could be released into the environment in the course of the materials' routine transport, use, or disposal. Releases could also occur as a result of accidental circumstances. Similarly, construction activities could encounter known or unknown hazardous materials sites located on or in the vicinity of construction sites, creating the potential for their disturbance and release. Other activities, including the intentional demolition of existing structures (e.g., buildings) and reuse of spoil, dredged material and/or RTM, would also present the potential to generate hazards or release hazardous materials.

Further, other potential hazards that could result from implementing conservation measures include the possible release of hazardous substances in proximity to sensitive receptors; damage or disruption of existing infrastructure such that hazardous conditions were created; the accidental release of hazardous substances during operation and maintenance (e.g., herbicides for nonnative

vegetation control); the release, in the short-term, of pesticides from former agricultural lands as a result of wetland and floodplain restoration; the potential for safety hazards related to construction in the vicinity of an airport; and the potential for wildfire hazards in the vicinity of construction sites.

The potential for these effects is considered adverse because implementation of conservation measures would involve extensive activities that could unintentionally result in the release of hazardous substances or that could expose construction workers or members of the public to hazards. However, with implementation of Mitigation Measures HAZ-1a, HAZ-1b, UT-6a, UT-6c, TRANS-1a, and environmental commitments (discussed previously for Impacts HAZ-1 through HAZ-6, and in detail in Appendix 3B, *Environmental Commitments*), the potential for adverse effects would be reduced. Additionally, the proposed conservation measures would be designed to avoid sensitive receptors and would minimize, to the extent feasible, the need to acquire or traverse areas where the presence of hazardous materials is suspected or has been verified. Thus, this effect would not be adverse.

Potential safety hazards to air traffic related to the potential for increased bird-aircraft strikes as a result of creating or enhancing wildlife habitat are discussed under Impact HAZ-8.

***CEQA Conclusion*:** The potential for impacts related to the release and exposure of workers and the public to hazardous substances or conditions during construction, operation, and maintenance of CM2–CM11, CM13, CM14, CM16, and CM18 could be significant. Conservation component implementation would involve extensive use of heavy equipment during construction, and/or the use and/or transport of hazardous chemicals during operations and maintenance (e.g., herbicides for nonnative vegetation control). These chemicals could be inadvertently released, exposing construction workers or the public to hazards. Construction of restoration projects on or near existing agricultural and industrial land may result in a conflict or exposure to known hazardous materials, and the use of high-profile equipment in close proximity to airport runways could result in hazards to air traffic. However in addition to implementation of SWPPPs, HMMPs, SPCCPs, SAPs, and a FPCP, Mitigation Measures HAZ-1a, HAZ-1b, UT-6a, UT-6c, and TRANS-1a would be implemented, all of which would ensure that these potential impacts are less than significant.

Mitigation Measure HAZ-1a: Perform Preconstruction Surveys, Including Soil and Groundwater Testing, at Known or Suspected Contaminated Areas within the Construction Footprint, and Remediate and/or Contain Contamination

Please refer to Mitigation Measure HAZ-1a under Impact HAZ-1 in the discussion of Alternative 1A.

Mitigation Measure HAZ-1b: Perform Pre-Demolition Surveys for Structures to Be Demolished within the Construction Footprint, Characterize Hazardous Materials and Dispose of Them in Accordance with Applicable Regulations

Please refer to Mitigation Measure HAZ-1b under Impact HAZ-1 in the discussion of Alternative 1A.

Mitigation Measure UT-6a: Verify Locations of Utility Infrastructure

Please see Mitigation Measure UT-6a under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure UT-6c: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Worker and Public Health and Safety

Please see Mitigation Measure UT-6c under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management Plan

Please see Mitigation Measure TRANS-1a under Impact TRANS-1 in the discussion of Alternative 1A in Chapter 19, *Transportation*.

Impact HAZ-8: Increased Risk of Bird–Aircraft Strikes during Implementation of Conservation Measures That Create or Improve Wildlife Habitat

NEPA Effects: The potential for implementation of conservation measures that create or improve wildlife habitat (CM2–CM11) to create hazards air and public safety through increased bird-aircraft strikes would be similar to the potential effects described under Alternative 1A. Potential variation from Alternative 1A would be anticipated to be minor but could result from the selection of different areas for restoration activities based on the location of the physical water conveyance features associated with each alternative. Such variation may result greater or less opportunity for bird-aircraft strikes depending on the location's proximity to airport flight zones. The following airports, because they are in relatively close proximity (within 2 miles) to the ROAs and/or conservation zones could potentially be affected: Travis Air Force Base; Rio Vista Municipal Airport; Funny Farm Airport; Sacramento International Airport, and Byron Airport.

The effect of increased bird-aircraft strikes during implementation of CM2–CM11 would be adverse because it could potentially result in an air and public safety hazard. Mitigation Measure HAZ-8 would reduce the severity of this effect through the development and implementation of measures to reduce, minimize and/or avoid wildlife hazards on air safety. However, this effect is would remain adverse.

CEQA Conclusion: Implementation of CM2–CM11, because they would create or improve wildlife habitat, could potentially attract waterfowl and other birds to areas in proximity to existing airport flight zones, and thereby result in an increase in bird-aircraft strikes, which could result in significant impacts on public safety. The following airports, because they are in relatively close proximity (within 2 miles) to the ROAs and/or conservation zones could potentially be affected: Travis Air Force Base; Rio Vista Municipal Airport; Funny Farm Airport; Sacramento International Airport, and Byron Airport. Mitigation Measure HAZ-8 could reduce the severity of this impact through the ultimate development and implementation of measures to reduce, minimize and/or avoid wildlife hazards on air safety, but not to a less-than-significant level. As such, the impact is significant and unavoidable.

Mitigation Measure HAZ-8: Consult with Individual Airports and USFWS, and Relevant Regulatory Agencies

Please refer to Mitigation Measure HAZ-8 under Impact HAZ-8 in the discussion of Alternative 1A. This mitigation measure will ensure that the potential for increased bird – aircraft strikes as a result of implementing CM2–CM11 in the vicinity of airports are minimized to the greatest extent possible.

24.3.3.14 Alternative 7—Dual Conveyance with Pipeline/Tunnel, Intakes 2, 3, and 5, and Enhanced Aquatic Conservation (9,000 cfs; Operational Scenario E)

Impact HAZ-1: Create a Substantial Hazard to the Public or the Environment through the Release of Hazardous Materials or by Other Means during Construction of the Water Conveyance Facilities

NEPA Effects: Hazards to the public or the environment through the routine transport, use, or disposal of hazardous materials during construction of the water conveyance facilities for Alterative 7 would be similar to those described under Alternative 1A. Under Alternative 7, however, only Intakes 2, 3, and 5 would be constructed. Thus, it is anticipated that effects associated with the transport and use of fuels for this alternative would be similar, but less severe, than those described for Alternative 1A.

Potential hazards associated with natural gas accumulation in tunnels, existing contaminants in soil sediment, or groundwater, hazardous constituents present in RTM, infrastructure containing hazardous materials, and routine transportation of hazardous materials would be similar to those described under Alternative 1A. Because only Intakes 2, 3, and 5 would be built under this alternative, however, implementation would avoid any site-specific contaminants or hazardous materials associated with the construction of Intakes 1 and 4.

As with Alternative 1A, tunnel construction activities would carry the potential to encounter gases that could enter the tunnels and accumulate to flammable or explosive concentrations. Hazardous constituents associated with RTM are not anticipated; however, the possibility exists for RTM and decanted water to pose a hazard to the construction workers, the public, or the environment. Additionally, stored bulk quantities of hazardous materials that have been released to soils and groundwater could be rereleased during construction, also posing a potential hazard. Water conveyance facilities construction may also require dredging contaminated sediments. Existing infrastructure, including oil and gas wells, also have the potential to release hazardous materials, as would the transport of hazardous materials during facility construction. Under Alternative 7, approximately 143 existing structures would require relocation or removal because they fall within the construction footprint. These include an estimated 38 residential structures; 8 recreational structures; 88 storage and agricultural support structures; and 9 other types of structures (e.g., power/utility structures, bridges and other infrastructure). One fire station in the community of Hood would also be affected under this alternative. These structures may contain hazardous materials that would require proper handling and disposal, if demolition is necessary. As described for Impact HAZ-1 under Alternative 1A, Mitigation Measure HAZ-1b would be implemented by DWR to ensure that there are no adverse effects related to hazardous materials from structure demolition.

Further, as described for Alternative 1A under Impact HAZ-1, in general, the transportation of hazardous materials via trucks, trains and ships poses potential risks associated with the accidental release of these materials to the environment. Rerouting vehicular traffic carrying hazardous materials during construction of the water conveyance facilities could increase the risk of accidental release due to inferior road quality or lack of driver familiarity with the modified routes. Hazardous materials transportation routes are presented in Figure 24-2 and in Table 24-4. Routes anticipated to be affected during construction of the water conveyance facilities are described in Chapter 19, *Transportation*. Barges supporting water conveyance facilities construction may also transport hazardous materials such as fuels and lubricants or other chemicals. The potential exists for

accidental release of hazardous materials from BDCP-related barges. To avoid effects on the environment related to this issue, BMPs would be implemented as part of a Barge Operations Plan (as discussed under Impact HAZ-1 for Alternative 1A and in Appendix 3B, *Environmental Commitments*) that would reduce the potential for accidental releases of hazardous materials during transport and transfer. Finally, under this alternative, the proposed conveyance crosses under the existing BNSF/Amtrak San Joaquin line between Bacon Island and Woodward Island; however, the effect of this crossing would likely be minimal because the proposed conveyance would traverse the railroad in a deep bore tunnel (See Chapter 19 for discussion). Further, the UPRR runs proximate to the construction area of the proposed Byron Forebay; however, construction is unlikely to disrupt rail service because much of this line has not been in service recently.

Mitigation measures would be in place to ensure that there are no adverse effects on road, rail, or water transportation, and, thus, the potential for the construction of the water conveyance facilities to pose risks related to the transportation of hazardous materials would be minimal. As described in Chapter 19, *Transportation*, under Mitigation Measure TRANS-1a, a site-specific construction traffic management plan, taking into account hazardous materials transportation, would be prepared and implemented prior to initiation of water conveyance facilities construction. Mitigation Measure TRANS-1a, would also include stipulations to coordinate with rail providers to develop alternative interim transportation modes (e.g., trucks or buses) that could be used to provide freight and/or passenger service during any longer term railroad closures and daily construction time windows during which construction would be restricted or rail operations would need to be suspended for any activity within railroad rights of way. This would minimize the potential risk of release of hazardous materials being transported via these rails.

As noted in the discussion of Impact HAZ-1 under Alternative 1A, project design will minimize, to the extent feasible, the need to acquire or traverse areas where the presence of hazardous materials is suspected or has been verified. Further, environmental commitments would be implemented, including, but not limited to SWPPPs, SPCCPs, SAPs and HMMPs; a Barge Operations Plan; and chemical characterization of RTM prior to reuse (e.g., RTM in levee reinforcement) or discharge. The environmental commitments would reduce these potential hazards associated with water conveyance facilities construction. Additionally, the implementation of Mitigation Measures HAZ-1a and HAZ-1b, UT-6a and UT-6c (described in Chapter 20, *Public Services and Utilities*), and TRANS-1a (described in Chapter 19, *Transportation*) would further reduce the potential severity of this impact. Therefore, construction of the water conveyance facilities would not create a substantial hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or the upset/accidental release of these materials. Thus, this effect would not be adverse.

CEQA Conclusion: Similar to Alternative 1A, construction of the water conveyance facilities under Alternative 7 presents the potential for a direct significant impact on construction personnel, the public and/or the environment associated with a variety of physical and chemical hazardous conditions because of the intensity of construction activities at the north Delta intakes, forebays and conveyance pipelines and tunnels and the hazardous materials that would be needed in these areas during construction. Potential hazards include the routine use of hazardous materials (as defined by Title 22 of the California Code of Regulations, Division 4.5); natural gas accumulation in water conveyance tunnels; the inadvertent release of existing contaminants in soil, sediment and groundwater, or hazardous materials in existing infrastructure to be removed; disturbance of electrical transmission lines; and hazardous constituents present in RTM. Under this alternative, however, only Intakes 2, 3 and 5 would be constructed. Thus, it is anticipated that effects associated with the transport and use of fuels for this alternative would be similar, but less severe, than those

described for Alternative 1A. Many of these physical and chemical hazardous conditions would occur in close proximity to the towns of Hood and Courtland during construction of the north Delta intakes and the intermediate forebay. Additionally, the potential would exist for the construction of the water conveyance facilities to indirectly result in the release of hazardous materials through the disruption of existing road, rail, or river hazardous materials transport routes because construction would occur in the vicinity of three hazardous material transport routes, three railroad corridors, and waterways with barge traffic and would require construction traffic that could disrupt these routes. For these reasons, this is considered a significant impact. However, with the implementation of the previously described environmental commitments (e.g., SWPPPs, HMMPs, SPCCPs, SAPs, and a Barge Operations Plan) and Mitigation Measures HAZ-1a and HAZ-1b, UT-6a and UT-6c (described in Chapter 20, *Public Services and Utilities)*, and TRANS-1a (described in Chapter 19, *Transportation*), construction of the water conveyance facilities would not create a substantial hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or the upset/accidental release of these materials. As such, these impacts would be less than significant.

Mitigation Measure HAZ-1a: Perform Preconstruction Surveys, Including Soil and Groundwater Testing, at Known or Suspected Contaminated Areas within the Construction Footprint, and Remediate and/or Contain Contamination

Please refer to Mitigation Measure HAZ-1a under Impact HAZ-1 in the discussion of Alternative 1A.

Mitigation Measure HAZ-1b: Perform Pre-Demolition Surveys for Structures to Be Demolished within the Construction Footprint, Characterize Hazardous Materials and Dispose of Them in Accordance with Applicable Regulations

Please refer to Mitigation Measure HAZ-1b under Impact HAZ-1 in the discussion of Alternative 1A.

Mitigation Measure UT-6a: Verify Locations of Utility Infrastructure

Please see Mitigation Measure UT-6a under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure UT-6c: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Worker and Public Health and Safety

Please see Mitigation Measure UT-6c under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management Plan

Please see Mitigation Measure TRANS-1a under Impact TRANS-1 in the discussion of Alternative 1A in Chapter 19, *Transportation*.

Impact HAZ-2: Expose Sensitive Receptors Located within 0.25 Mile of a Construction Site to Hazardous Materials, Substances, or Waste during Construction of the Water Conveyance Facilities

NEPA Effects: An adverse effect may occur if a construction work site is located within 0.25 mile of an existing or proposed school, or other sensitive receptor, and releases hazardous materials that pose a health hazard. However, no schools, parks or hospitals are located within 0.25 mile of Alternative 7. Therefore, no sensitive receptors would be exposed to hazardous materials, substances, or waste during construction of the water conveyance facilities under Alternative 7. As such, there would be no effect. Potential air quality effects on sensitive receptors are discussed in Chapter 22, *Air Quality and Greenhouse Gases.*

***CEQA Conclusion*:** There are no schools, parks or hospitals located within 0.25 mile of the Alternative 7 water conveyance facilities alignment, therefore, there would be no impact due to exposure of sensitive receptors to hazardous materials, substances or waste during construction of the water conveyance facilities. Accordingly, there would be no impact. No mitigation is required. Potential air quality effects on sensitive receptors are discussed in Chapter 22, *Air Quality and Greenhouse Gases.*

Impact HAZ-3: Potential to Conflict with a Known Hazardous Materials Site and, as a Result, Create a Significant Hazard to the Public or the Environment

NEPA Effects: There are no "Cortese List" sites or known SOCs within the construction footprint of Alternative 7 (Table 24-5 and Figure 24-4), and therefore there would be no conflict pertaining to a known hazardous materials site during construction of the water conveyance facilities, and thus, no related hazard to the public or the environment. For those hazardous materials sites identified within the 0.5-mile radius but which are not within the construction footprint, there would be no potential for construction of the water conveyance facilities to disturb those sites such that there would be a re-release of hazardous materials that would create a hazard for the public or environment. As such, there would be no effect. The potential for encountering unknown hazardous materials sites during the course of construction is discussed under Impact HAZ-1.

CEQA Conclusion: Because there are no known SOCs within the construction footprint of the water conveyance facility under this alternative, there would be no conflict with known hazardous materials sites during construction of the water conveyance facilities, and therefore, no related hazard to the public or the environment. As such, there would be no impact. No mitigation is required. The potential for encountering unknown hazardous materials sites during the course of construction is discussed under Impact HAZ-1.

Impact HAZ-4: Result in a Safety Hazard Associated with an Airport or Private Airstrip within 2 Miles of the Water Conveyance Facilities Footprint for People Residing or Working in the Study Area during Construction of the Water Conveyance Facilities

NEPA Effects: Safety hazards to aircraft posed by high-profile construction equipment, such as cranes and pile drivers, or structures (e.g., proposed transmission lines and towers), would be similar to those described under Alternative 1A. Because Intake would not be constructed under this alternative, these risks of construction of this intake (the potential use of tall cranes and pile drivers for installation of the Intake 1) would not exist. However, because the Borges-Clarksburg, Spezia, and Walnut Grove Airports (all private airstrips), and the Byron Airport (a public air facility), are located within 2 miles of project features within the construction footprint that may not only require

the use of high-profile (200 feet of taller) construction equipment, but also the use of helicopters (stringing of a proposed permanent 230 kV transmission line), there would be potential for adverse effects on air safety.

However, as required, DWR would notify Caltrans' Division of Aeronautics in writing prior to construction of any state building or enclosure within 2 miles of these airports, as applicable, and would comply with any Caltrans recommendations based on site investigation(s). Additionally, DWR would comply with the recommendations of the OE/AAA (for Byron Airport) (14 CFR 77. These actions would ensure that there are no adverse effects on air safety.

CEQA Conclusion: The use of helicopters for stringing the proposed 230 kV transmission lines and of high-profile construction equipment (200 feet or taller), such as cranes, for installation of pipelines, for example, have the potential to result in safety hazards to aircraft during takeoff and landing if the equipment is operated too close to runways. Three private airports (Borges-Clarksburg, Spezia, and Walnut Grove Airports) and one public airport (Byron Airport) are located within 2 miles of the construction footprint of Alternative 7. DWR would coordinate with Caltrans' Division of Aeronautics prior to initiating construction and comply with its recommendations based on its investigation(s), as well comply with the recommendations of the OE/AAA (for Byron Airport). Compliance with these recommendations, which could include limitations necessary to minimize potential problems, such as the use of temporary construction equipment, supplemental notice requirements, and marking and lighting high-profile structures would reduce the potential for impacts on air safety. Accordingly, impacts on air safety would be less than significant. No mitigation is required.

Impact HAZ-5: Expose People or Structures to a Substantial Risk of Property Loss, Personal Injury or Death Involving Wildland Fires, Including Where Wildlands Are adjacent to Urbanized Areas or Where Residences Are Intermixed with Wildlands, as a Result of Construction, and Operation and Maintenance of the Water Conveyance Facilities

NEPA Effects: Hazards related to wildland fires would be similar to those described under Alternative 1A. The northernmost and southernmost extent of this conveyance alignment would be adjacent to zones of moderate fire hazard severity.

As described under Alternative 1A and in Appendix 3B, *Environmental Commitments*, precautions would be taken to prevent wildland fires during construction, and operation and maintenance of the water conveyance facilities in full compliance with Cal-OSHA standards for fire safety and prevention. Additionally, DWR would develop and implement fire prevention, safety and control measures as part of a FPCP in coordination with federal, state, and local agencies. Implementation of these would help ensure that people or structures would not be subject to a significant risk of loss, injury or death involving wildland fires. Consequently, this effect would not be adverse.

CEQA Conclusion: People or structures would not be subject to a significant risk of loss, injury or death involving wildland fires during construction or operation and maintenance of the water conveyance facilities because the alternative would comply with Cal-OSHA fire prevention and safety standards; DWR would implement standard fire safety and prevention measures, as part of a FPCP (Appendix 3B, *Environmental Commitments*); and because the water conveyance facilities would not be located in a High or Very High Fire Hazard Severity Zone. Therefore, this impact would be less than significant. No mitigation is required.

Impact HAZ-6: Create a Substantial Hazard to the Public or the Environment through the Release of Hazardous Materials or by Other Means during Operation and Maintenance of the Water Conveyance Facilities

NEPA Effects: Potential hazards related to the long-term operation and maintenance of the water conveyance facilities would be similar to those described for Alternative 1A. Under Alternative 7, however, the potential for hazards associated with intake pumping plants and sediment basins would be less widespread, because only three intake facilities would be operated and maintained. Nonetheless, this alternative may require the transport, storage, and use of chemicals or hazardous waste materials including fuel, oils, grease, solvents, and paints. Solids collected at solids lagoons and sediment dredged during intake maintenance may contain hazardous constituents (e.g., persistent pesticides, mercury, PCBs). To ensure that potentially contaminated sediment from maintenance dredging activities at the intakes would not adversely affect soil, groundwater or surface water, a SAP would be implemented prior to any dredging activities, as described under Impact HAZ-1 for this alternative. All sediment would be characterized chemically prior to reuse to ensure that reuse of this material would not result in a hazard to the public or the environment.

The locations of airports with respect to the pipeline/tunnel alignment are provided in Figure 24-9. The Borges-Clarksburg, Walnut Grove, and Spezia Airports (all private air facilities), and the Byron Airport (a public air facility) are located within 2 miles of the Alternative 7 construction footprint (Figure 24-9 and Table 24-6). With the exception of power transmission lines supplying power to pumps, surge towers, and other equipment used for water conveyance facilities operation and maintenance, water conveyance facilities operations and maintenance are not anticipated to require high-profile equipment, the use of which near an airport runway could result in an adverse effect on aircraft. DWR would adhere to all applicable FAA regulations (14 CFR 77) and coordinate with Caltrans' Division of Aeronautics prior to initiating maintenance activities requiring high-profile equipment to avoid adverse effects on air safety. Compliance with these recommendations, which could include limitations necessary to minimize potential problems, such as the use of temporary construction equipment, supplemental notice requirements, and marking and lighting high-profile structures would reduce the potential for impacts on air safety.

Potential releases of hazardous materials could result in an adverse effect on workers, the public (including sensitive receptors within 0.25 mile of the water conveyance facilities), and the environment. As with Alternative 1A, there are no sensitive receptors (i.e., schools, hospitals and parks) located within 0.25 mile of Alternative 7.

Because the types of potentially hazardous materials used during routine operation and maintenance activities would be used in relatively small quantities, and because BMPs, as would be implemented in the SWPPPs, SPCCPs, and HMMPs (as described in Appendix 3B), would be in place to help prevent the inadvertent release of these materials and to contain and remediate spills should they occur, the risk to the public and environment would be negligible. Further, under Mitigation Measure HAZ-6, solids from the solids lagoons would be sampled and characterized to evaluate disposal options, and disposed of accordingly at an appropriate, licensed facility. These measures would ensure that this effect is not adverse.

***CEQA Conclusion*:** The accidental release of hazardous materials to the environment during operation and maintenance of the water conveyance facilities and the potential interference with air safety through the use of high-profile equipment for maintenance of proposed transmission lines could have impacts on the public and environment. However, implementation of the BMPs and other

activities required by SWPPPs, HMMPs, SPCCPs, SAPs, and Mitigation Measure HAZ-6, which would ensure that dewatered solids are not reintroduced to the environment and are properly disposed of, as well as adherence to all applicable FAA regulations (14 CFR Part 77) and coordination/compliance with Caltrans' Division of Aeronautics when performing work with high-profile equipment within 2 miles of an airport, which would include implementation of recommendations to provide supplemental notice and/or equip high-profile structures with marking and lighting, would ensure that operation and maintenance of the water conveyance facilities would not create a substantial hazard to the public, environment or air traffic safety. Therefore, this impact would be less than significant.

Mitigation Measure HAZ-6: Test Dewatered Solids from Solids Lagoons Prior to Reuse and/or Disposal

Please refer to Mitigation Measure HAZ-6 under Impact HAZ-6 in the discussion of Alternative 1A.

Impact HAZ-7: Create a Substantial Hazard to the Public or the Environment through the Release of Hazardous Materials or by Other Means as a Result of Implementing Conservation Measures CM2-CM11, CM13, CM14, CM16 and CM18

NEPA Effects: The potential for construction, operation, and maintenance activities associated with the implementation of conservation measures (CM2–CM11, CM13, CM 14, CM16, and CM18) to create hazards to workers, the public, and the environment would be similar to those described under Alternative 1A. Effects related to channel margin enhancement and seasonally-inundated floodplain restoration, however, would be more widespread under this alternative, because the targeted areas are larger under this alternative (approximately 40 miles and 20,000 acres, respectively, as compared with 20 miles and 10,000 acres under Alternative 1A). Hazardous materials associated with the operation of construction equipment could be released into the environment in the course of the materials' routine transport, use, or disposal. Releases could also occur as a result of accidental circumstances. Similarly, construction activities could encounter known or unknown hazardous materials sites located on or in the vicinity of construction sites, creating the potential for their disturbance and release. Other activities, including the intentional demolition of existing structures (e.g., buildings) and reuse of spoil, dredged material and/or RTM, would also present the potential to generate hazards or release hazardous materials. However, prior to the reuse of spoils, dredged material or RTM, these materials would undergo chemical characterization, as described in Appendix 3B, *Environmental Commitments*, to ensure that they are not creating a hazard to the public and environment.

Further, other potential hazards that could result from implementing conservation measures include the possible release of hazardous substances in proximity to sensitive receptors; damage or disruption of existing infrastructure such that hazardous conditions were created; the accidental release of hazardous substances during operation and maintenance (e.g., herbicides for nonnative vegetation control); the release, in the short-term, of pesticides from former agricultural lands as a result of wetland and floodplain restoration; the potential for safety hazards related to construction in the vicinity of an airport; and the potential for wildfire hazards in the vicinity of construction sites.

These potential effects, were they to occur, would be adverse. However, with implementation of Mitigation Measures HAZ-1a, HAZ-1b, UT-6a, UT-6c, TRANS-1a, and environmental commitments

(discussed previously for Impacts HAZ-1 through HAZ-6, and in detail in Appendix 3B, *Environmental Commitments*), the potential for adverse effects would be reduced. Additionally, the proposed conservation measures would be designed to avoid sensitive receptors and would minimize, to the extent feasible, the need to acquire or traverse areas where the presence of hazardous materials is suspected or has been verified. Thus, this effect would not be adverse.

Potential safety hazards to air traffic related to the potential for increased bird-aircraft strikes as a result of creating or enhancing wildlife habitat are discussed under Impact HAZ-8.

***CEQA Conclusion*:** The potential for impacts related to the release and exposure of workers and the public to hazardous substances or conditions during construction, operation, and maintenance of CM2–CM11, CM13, CM14, CM16, and CM18 could be significant. Conservation component implementation would involve extensive use of heavy equipment during construction, and/or the use and/or transport of hazardous chemicals during operations and maintenance (e.g., herbicides for nonnative vegetation control). These chemicals could be inadvertently released, exposing construction workers or the public to hazards. Construction of restoration projects on or near existing agricultural and industrial land may result in a conflict or exposure to known hazardous materials, and the use of high-profile equipment in close proximity to airport runways could result in hazards to air traffic. However, in addition to implementation of SWPPPs, HMMPs, SPCCPs, SAPs, and a FPCP, Mitigation Measures HAZ-1a, HAZ-1b, UT-6a, UT-6c, and TRANS-1a would be implemented, all of which would ensure that these potential impacts are less than significant.

Mitigation Measure HAZ-1a: Perform Preconstruction Surveys, Including Soil and Groundwater Testing, at Known or Suspected Contaminated Areas within the Construction Footprint, and Remediate and/or Contain Contamination

Please refer to Mitigation Measure HAZ-1a under Impact HAZ-1 in the discussion of Alternative 1A.

Mitigation Measure HAZ-1b: Perform Pre-Demolition Surveys for Structures to Be Demolished within the Construction Footprint, Characterize Hazardous Materials and Dispose of Them in Accordance with Applicable Regulations

Please refer to Mitigation Measure HAZ-1b under Impact HAZ-1 in the discussion of Alternative 1A.

Mitigation Measure UT-6a: Verify Locations of Utility Infrastructure

Please see Mitigation Measure UT-6a under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure UT-6c: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Worker and Public Health and Safety

Please see Mitigation Measure UT-6c under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management Plan

Please see Mitigation Measure TRANS-1a under Impact TRANS-1 in the discussion of Alternative 1A in Chapter 19, *Transportation*.

Impact HAZ-8: Increased Risk of Bird–Aircraft Strikes during Implementation of Conservation Measures That Create or Improve Wildlife Habitat

NEPA Effects: The potential for implementation of conservation measures that create or improve wildlife habitat (CM2–CM11) to create hazards air and public safety through increased bird-aircraft strikes would be similar to the potential effects described under Alternative 1A. Potential variation from Alternative 1A would be anticipated to be minor but could result from the selection of different areas for restoration activities based on the location of the physical water conveyance features associated with each alternative. Such variation may result greater or less opportunity for bird-aircraft strikes depending on the location's proximity to airport flight zones. The following airports, because they are in relatively close proximity (within 2 miles) to the ROAs and/or conservation zones could potentially be affected: Travis Air Force Base; Rio Vista Municipal Airport; Funny Farm Airport; Sacramento International Airport, and Byron Airport.

The effect of increased bird-aircraft strikes during implementation of CM2–CM11 would be adverse because it could potentially result in an air and public safety hazard. Mitigation Measure HAZ-8 would reduce the severity of this effect through the development and implementation of measures to reduce, minimize and/or avoid wildlife hazards on air safety. However, this effect is would remain adverse.

CEQA Conclusion: Implementation of CM2–CM11, because they would create or improve wildlife habitat, could potentially attract waterfowl and other birds to areas in proximity to existing airport flight zones, and thereby result in an increase in bird-aircraft strikes, which could result in significant impacts on public safety. The following airports, because they are in relatively close proximity (within 2 miles) to the ROAs and/or conservation zones could potentially be affected: Travis Air Force Base; Rio Vista Municipal Airport; Funny Farm Airport; Sacramento International Airport, and Byron Airport. Mitigation Measure HAZ-8 could reduce the severity of this impact through the ultimate development and implementation of measures to reduce, minimize and/or avoid wildlife hazards on air safety, but not to a less-than-significant level. As such, the impact is significant and unavoidable.

Mitigation Measure HAZ-8: Consult with Individual Airports and USFWS, and Relevant Regulatory Agencies

Please refer to Mitigation Measure HAZ-8 under Impact HAZ-8 in the discussion of Alternative 1A. This mitigation measure will ensure that the potential for increased bird – aircraft strikes as a result of implementing CM2–CM11 in the vicinity of airports are minimized to the greatest extent possible.

24.3.3.15 Alternative 8—Dual Conveyance with Pipeline/Tunnel, Intakes 2, 3, and 5, and Increased Delta Outflow (9,000 cfs; Operational Scenario F)

Impact HAZ-1: Create a Substantial Hazard to the Public or the Environment through the Release of Hazardous Materials or by Other Means during Construction of the Water Conveyance Facilities

NEPA Effects: Hazards to the public or the environment through the routine transport, use, or disposal of hazardous materials during construction of the water conveyance facilities for Alterative 8 would be similar to those described under Alternative 1A. Under this alternative, however, only Intakes 2, 3, and 5 would be constructed. Thus, it is anticipated that effects associated with the transport and use of fuels for this alternative would be similar, but less severe, than those described for Alternative 1A.

Potential hazards associated with natural gas accumulation in tunnels, existing contaminants in soil or groundwater, hazardous constituents present in RTM, infrastructure containing hazardous materials, and routine transportation of hazardous materials would be similar to those described under Alternative 1A. Because only Intakes 2, 3, and 5 would be built under this alternative, however, implementation would avoid any site-specific contaminants or hazardous materials associated with the construction of Intakes 1 and 4.

As with Alternative 1A, tunnel construction activities would carry the potential to encounter gases that could enter the tunnels and accumulate to flammable or explosive concentrations. Hazardous constituents associated with RTM are not anticipated; however, the possibility exists for RTM and decanted water to pose a hazard to the construction workers, the public, or the environment. Additionally, stored bulk quantities of hazardous materials that have been released to soils and groundwater could be rereleased during construction, also posing a potential hazard. Water conveyance facilities construction may also require dredging contaminated sediments. Existing infrastructure, including oil and gas wells, also have the potential to release hazardous materials, as would the transport of hazardous materials during facility construction. Existing structures that would require relocation or removal under Alternative 8 would be the same as under Alternative 7. These structures may contain hazardous materials that would require proper handling and disposal, if demolition is necessary. As described for Impact HAZ-1 under Alternative 1A, Mitigation Measure HAZ-1b would be implemented by DWR to ensure that there are no adverse effects related to structure demolition due to hazardous materials.

As described for Alternative 1A under Impact HAZ-1, in general, the transportation of hazardous materials via trucks, trains and ships poses potential risks associated with the accidental release of these materials to the environment. Rerouting vehicular traffic carrying hazardous materials during construction of the water conveyance facilities could increase the risk of accidental release due to inferior road quality or lack of driver familiarity with the modified routes. Hazardous materials transportation routes are presented in Figure 24-2 and in Table 24-4. Routes anticipated to be affected during construction of the water conveyance facilities are described in Chapter 19, *Transportation*. Barges supporting water conveyance facilities construction may also transport hazardous materials such as fuels and lubricants or other chemicals. The potential exists for accidental release of hazardous materials from BDCP-related barges. To avoid effects on the environment related to this issue, BMPs would be implemented as part of a Barge Operations Plan (as discussed under Impact HAZ-1 for Alternative 1A and in Appendix 3B, *Environmental*

Commitments) that would reduce the potential for accidental releases of hazardous materials during transport and transfer. Finally, under this alternative, the proposed conveyance would cross under the existing BNSF/Amtrak San Joaquin line between Bacon Island and Woodward Island; however, the effect of this crossing would likely be minimal because the proposed conveyance would traverse the railroad in a deep bore tunnel (see Chapter 19, *Transportation* for discussion). Further, the UPRR runs proximate to the construction area of the proposed Byron Forebay; however, construction is unlikely to disrupt rail service because much of this line has not been in service recently.

Mitigation measures would be in place to ensure that there are no adverse effects on road, rail, or water transportation, and, thus, the potential for the construction of the water conveyance facilities to pose risks related to the transportation of hazardous materials would be minimal. As described in Chapter 19, *Transportation*, under Mitigation Measure TRANS-1a, a site-specific construction traffic management plan, taking into account hazardous materials transportation, would be prepared and implemented prior to initiation of water conveyance facilities construction. Mitigation Measure TRANS-1a, would also include stipulations to coordinate with rail providers to develop alternative interim transportation modes (e.g., trucks or buses) that could be used to provide freight and/or passenger service during any longer term railroad closures and daily construction time windows during which construction would be restricted or rail operations would need to be suspended for any activity within railroad rights of way. This would minimize the potential risk of release of hazardous materials being transported via these rails.

As noted in the discussion of Impact HAZ-1 under Alternative 1A, project design will minimize, to the extent feasible, the need to acquire or traverse areas where the presence of hazardous materials is suspected or has been verified. Environmental commitments would be implemented, including SWPPPs, SPCCPs, SAPs, and HMMPs; a Barge Operations Plan; and chemical characterization of RTM prior to reuse (e.g., RTM in levee reinforcement) or discharge. Together, the environmental commitments would reduce these potential hazards associated with water conveyance facilities construction. Additionally, the implementation of Mitigation Measures HAZ-1a and HAZ-1b, UT-6a and UT-6c (described in Chapter 20, *Public Services and Utilities*), and TRANS-1a (described in Chapter 19, *Transportation*) would further reduce the potential severity of this impact. As such, construction of the water conveyance facilities would not create a substantial hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or the upset/accidental release of these materials. Thus, this effect would not be adverse.

CEQA Conclusion: Similar to Alternative 1A, construction of the water conveyance facilities under Alternative 7 presents the potential for a direct significant impact on construction personnel, the public and/or the environment associated with a variety of physical and chemical hazardous conditions because of the intensity of construction activities at the north Delta intakes, forebays and conveyance pipelines and tunnels and the hazardous materials that would be needed in these areas during construction. Potential hazards include the routine use of hazardous materials (as defined by Title 22 of the California Code of Regulations, Division 4.5); natural gas accumulation in water conveyance tunnels; the inadvertent release of existing contaminants in soil, sediment and groundwater, or hazardous materials in existing infrastructure to be removed; disturbance of electrical transmission lines; and hazardous constituents present in RTM. Under this alternative, however, only Intakes 2, 3 and 5 would be constructed. Thus, it is anticipated that effects associated with the transport and use of fuels for this alternative would be similar, but less severe, than those described for Alternative 1A. Many of these physical and chemical hazardous conditions would occur in close proximity to the towns of Hood and Courtland during construction of the north Delta intakes and the intermediate forebay. Additionally, the potential would exist for the construction of

the water conveyance facilities to indirectly result in the release of hazardous materials through the disruption of existing road, rail, or river hazardous materials transport routes because construction would occur in the vicinity of three hazardous material transport routes, three railroad corridors, and waterways with barge traffic and would require construction traffic that could disrupt these routes. For these reasons, this is considered a significant impact. However, with the implementation of the previously described environmental commitments (e.g., SWPPPs, HMMPs, SPCCPs, and a Barge Operations Plan) and Mitigation Measures HAZ-1a and HAZ-1b, UT-6a and UT-6c (described in Chapter 20, *Public Services and Utilities)*, and TRANS-1a (described in Chapter 19, *Transportation*), construction of the water conveyance facilities would not create a substantial hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or the upset/accidental release of these materials. As such, these impacts would be less than significant.

Mitigation Measure HAZ-1a: Perform Preconstruction Surveys, Including Soil and Groundwater Testing, at Known or Suspected Contaminated Areas within the Construction Footprint, and Remediate and/or Contain Contamination

Please refer to Mitigation Measure HAZ-1a under Impact HAZ-1 in the discussion of Alternative 1A.

Mitigation Measure HAZ-1b: Perform Pre-Demolition Surveys for Structures to Be Demolished within the Construction Footprint, Characterize Hazardous Materials and Dispose of Them in Accordance with Applicable Regulations

Please refer to Mitigation Measure HAZ-1b under Impact HAZ-1 in the discussion of Alternative 1A.

Mitigation Measure UT-6a: Verify Locations of Utility Infrastructure

Please see Mitigation Measure UT-6a under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure UT-6c: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Worker and Public Health and Safety

Please see Mitigation Measure UT-6c under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management Plan

Please see Mitigation Measure TRANS-1a under Impact TRANS-1 in the discussion of Alternative 1A in Chapter 19, *Transportation*.

Impact HAZ-2: Expose Sensitive Receptors Located within 0.25 Mile of a Construction Site to Hazardous Materials, Substances, or Waste during Construction of the Water Conveyance Facilities

NEPA Effects: An adverse effect may occur if a construction work site is located within 0.25 mile of an existing or proposed school, or other sensitive receptor, and releases hazardous materials that pose a health hazard. However, no schools, parks or hospitals are located within 0.25 mile of Alternative 8. Therefore, no sensitive receptors would be exposed to hazardous materials,

substances, or waste during construction of the water conveyance facilities under Alternative 8. As such, there would be no effect. Potential air quality effects on sensitive receptors are discussed in Chapter 22, *Air Quality and Greenhouse Gases.*

***CEQA Conclusion*:** There are no schools, parks or hospitals located within 0.25 mile of the Alternative 8 water conveyance facilities alignment, therefore, there would be no impact due to exposure of sensitive receptors to hazardous materials, substances or waste during construction of the water conveyance facilities. Accordingly, there would be no impact. No mitigation is required. Potential air quality effects on sensitive receptors are discussed in Chapter 22, *Air Quality and Greenhouse Gases.*

Impact HAZ-3: Potential to Conflict with a Known Hazardous Materials Site and, as a Result, Create a Significant Hazard to the Public or the Environment

NEPA Effects: There are no "Cortese List" sites or known SOCs within the construction footprint of Alternative 8 (Table 24-5 and Figure 24-4), and therefore there would be no conflict pertaining to a known hazardous materials site during construction of the water conveyance facilities, and thus, no related hazard to the public or the environment. For those hazardous materials sites identified within the 0.5-mile radius but which are not within the construction footprint, there would be no potential for construction of the water conveyance facilities to disturb those sites such that there would be a re-release of hazardous materials that would create a hazard for the public or environment. As such, there would be no effect. The potential for encountering unknown hazardous materials sites during the course of construction is discussed under Impact HAZ-1.

CEQA Conclusion: Because there are no known SOCs within the construction footprint of the water conveyance facility under this alternative, there would be no conflict with known hazardous materials sites during construction of the water conveyance facilities, and therefore, no related hazard to the public or the environment. As such, there would be no impact. No mitigation is required. The potential for encountering unknown hazardous materials sites during the course of construction is discussed under Impact HAZ-1.

Impact HAZ-4: Result in a Safety Hazard Associated with an Airport or Private Airstrip within 2 Miles of the Water Conveyance Facilities Footprint for People Residing or Working in the Study Area during Construction of the Water Conveyance Facilities

NEPA Effects: Safety hazards to aircraft posed by high-profile construction equipment, such as cranes and pile drivers, or structures (e.g., proposed transmission lines and towers), would be similar to those described under Alternative 1A. Because Intake 1 and 4 would not be constructed under this alternative, these risks of construction of these intakes (the potential use of tall cranes and pile drivers for installation of Intakes 1 and 4) would not exist. However, because the Borges-Clarksburg, Spezia, and Walnut Grove Airports (all private airstrips), and the Byron Airport (a public air facility), are located within 2 miles of project features within the construction footprint that may not only require the use of high-profile (200 feet of taller) construction equipment, but also the use of helicopters (stringing of a proposed permanent 230 kV transmission line), there would be potential for adverse effects on air safety.

However, as required, DWR would notify Caltrans' Division of Aeronautics in writing prior to construction of any state building or enclosure within 2 miles of these airports, as applicable, and would comply with any Caltrans recommendations based on site investigation(s). Additionally, DWR

would comply with the recommendations of the OE/AAA (for Byron Airport) (14 CFR 77. These actions would ensure that there are no adverse effects on air safety.

CEQA Conclusion: The use of helicopters for stringing the proposed 230 kV transmission lines and of high-profile construction equipment (200 feet or taller), such as cranes, for installation of pipelines, for example, have the potential to result in safety hazards to aircraft during takeoff and landing if the equipment is operated too close to runways. Three private airports (Borges-Clarksburg, Spezia, and Walnut Grove Airports) and one public airport (Byron Airport) are located within 2 miles of the construction footprint of Alternative 8. DWR would coordinate with Caltrans' Division of Aeronautics prior to initiating construction and comply with its recommendations based on its investigation(s), as well comply with the recommendations of the OE/AAA (for Byron Airport). Compliance with these recommendations, which could include limitations necessary to minimize potential problems, such as the use of temporary construction equipment, supplemental notice requirements, and marking and lighting high-profile structures would reduce the potential for impacts on air safety. Accordingly, impacts on air safety would be less than significant. No mitigation is required.

Impact HAZ-5: Expose People or Structures to a Substantial Risk of Property Loss, Personal Injury or Death Involving Wildland Fires, Including Where Wildlands Are adjacent to Urbanized Areas or Where Residences Are Intermixed with Wildlands, as a Result of Construction, and Operation and Maintenance of the Water Conveyance Facilities

NEPA Effects: Hazards related to wildland fires would be similar to those described under Alternative 1A. The northernmost and southernmost extent of this conveyance alignment would be adjacent to zones of moderate fire hazard severity.

As described under Alternative 1A and in Appendix 3B, *Environmental Commitments*, precautions would be taken to prevent wildland fires during construction, and operation and maintenance of the water conveyance facilities in full compliance with Cal-OSHA standards for fire safety and prevention. Additionally, DWR would develop and implement fire prevention, safety and control measures as part of a FPCP in coordination with federal, state, and local agencies. Implementation of these would help ensure that people or structures would not be subject to a significant risk of loss, injury or death involving wildland fires. Therefore, this effect would not be adverse.

CEQA Conclusion: People or structures would not be subject to a significant risk of loss, injury or death involving wildland fires during construction or operation and maintenance of the water conveyance facilities because the alternative would comply with Cal-OSHA fire prevention and safety standards; DWR would implement standard fire safety and prevention measures, as part of a FPCP (Appendix 3B, *Environmental Commitments*); and because the water conveyance facilities would not be located in a High or Very High Fire Hazard Severity Zone. Therefore, this impact would be less than significant. No mitigation is required.

Impact HAZ-6: Create a Substantial Hazard to the Public or the Environment through the Release of Hazardous Materials or by Other Means during Operation and Maintenance of the Water Conveyance Facilities

NEPA Effects: Potential hazards related to the long-term operation and maintenance of the water conveyance facilities would be similar to those described for Alternative 1A. Under this alternative, however, the potential for hazards associated with intake pumping plants and sediment basins would be less widespread, as only three intake facilities would be operated and maintained.

Nonetheless, this alternative may require the transport, storage, and use of chemicals or hazardous waste materials including fuel, oils, grease, solvents, and paints. Solids collected at solids lagoons and sediment dredged during intake maintenance may contain hazardous constituents (e.g., persistent pesticides, mercury, PCBs). To ensure that potentially contaminated sediment from maintenance dredging activities at the intakes would not adversely affect soil, groundwater or surface water, a SAP would be implemented prior to any dredging activities, as described under Impact HAZ-1 for this alternative. All sediment would be characterized chemically prior to reuse to ensure that reuse of this material would not result in a hazard to the public or the environment.

The locations of airports with respect to the pipeline/tunnel alignment are provided in Figure 24-9. The Borges-Clarksburg, Walnut Grove, and Spezia Airports (all private facilities) and the Byron Airport (a public facility) would be within 2 miles of the Alternative 8 construction footprint (Figure 24-9 and Table 24-6). With the exception of power transmission lines supplying power to pumps, surge towers, and other equipment used for water conveyance facilities operation and maintenance, water conveyance facilities operations and maintenance are not anticipated to require high-profile equipment, the use of which near an airport runway could result in an adverse effect on aircraft. DWR would adhere to all applicable FAA regulations (14 CFR 77) and coordinate with Caltrans' Division of Aeronautics prior to initiating maintenance activities requiring high-profile equipment to avoid adverse effects on air safety. Compliance with these recommendations, which could include limitations necessary to minimize potential problems, such as the use of temporary construction equipment, supplemental notice requirements, and marking and lighting high-profile structures would reduce the potential for impacts on air safety.

Potential releases of hazardous materials could result in an adverse effect on workers, the public (including sensitive receptors within 0.25 mile of the water conveyance facilities), and the environment. As with Alternative 1A, there are no sensitive receptors (i.e., schools, hospitals and parks) located within 0.25 mile of Alternative 8.

Because the types of potentially hazardous materials used during routine operation and maintenance activities would be used in relatively small quantities, and because BMPs, as would be implemented in the SWPPPs, SPCCPs, and HMMPs (detailed in Appendix 3B), would be in place to help prevent the inadvertent release of these materials and to contain and remediate spills should they occur, the risk to the public and environment would be negligible. Further, under Mitigation Measure HAZ-6, solids from the solids lagoons would be sampled and characterized to evaluate disposal options, and disposed of accordingly at an appropriate, licensed facility. These measures would ensure that this effect is not adverse.

***CEQA Conclusion*:** The accidental release of hazardous materials to the environment during operation and maintenance of the water conveyance facilities and the potential interference with air safety through the use of high-profile equipment for maintenance of proposed transmission lines could have impacts on the public and environment. However, implementation of the BMPs and other activities required by SWPPPs, HMMPs, SPCCPs, SAPs, and Mitigation Measure HAZ-6, which would ensure that dewatered solids are not reintroduced to the environment and are properly disposed of, as well as adherence to all applicable FAA regulations (14 CFR Part 77) and coordination/compliance with Caltrans' Division of Aeronautics when performing work with high-profile equipment within 2 miles of an airport, which would include implementation of recommendations to provide supplemental notice and/or equip high-profile structures with marking and lighting, would ensure that operation and maintenance of the water conveyance

facilities would not create a substantial hazard to the public, environment or air traffic safety. Therefore, this impact would be less than significant.

Mitigation Measure HAZ-6: Test Dewatered Solids from Solids Lagoons Prior to Reuse and/or Disposal

Please refer to Mitigation Measure HAZ-6 under Impact HAZ-6 in the discussion of Alternative 1A.

Impact HAZ-7: Create a Substantial Hazard to the Public or the Environment through the Release of Hazardous Materials or by Other Means as a Result of Implementing Conservation Measures CM2-CM11, CM13, CM14, CM16 and CM18

NEPA Effects: The potential for construction, operation, and maintenance activities associated with the implementation of conservation measures (CM2–CM11, CM13, CM 14, CM16, and CM18) to create hazards to workers, the public, and the environment would be similar to those described under Alternative 1A but could differ based upon different target acreages chosen for habitat restoration or enhancement. Hazardous materials associated with the operation of construction equipment could be released into the environment in the course of the materials' routine transport, use, or disposal. Releases could also occur as a result of accidental circumstances. Similarly, construction activities could encounter known or unknown hazardous materials sites located on or in the vicinity of construction sites, creating the potential for their disturbance and release. Other activities, including the intentional demolition of existing structures (e.g., buildings) and reuse of spoil, dredged material and/or RTM, would also present the potential to generate hazards or release hazardous materials. However, prior to the reuse of spoils, dredged material or RTM, these materials would undergo chemical characterization, as described in Appendix 3B, *Environmental Commitments*, to ensure that they are not creating a hazard to the public and environment.

Further, other potential hazards that could result from implementing conservation measures include the possible release of hazardous substances in proximity to sensitive receptors; damage or disruption of existing infrastructure such that hazardous conditions were created; the accidental release of hazardous substances during operation and maintenance (e.g., herbicides for nonnative vegetation control); the release, in the short-term, of pesticides from former agricultural lands as a result of wetland and floodplain restoration; the potential for safety hazards related to construction in the vicinity of an airport; and the potential for wildfire hazards in the vicinity of construction sites.

The potential for these effects is considered adverse because implementation of conservation measures would involve extensive activities that could unintentionally result in the release of hazardous substances or that could expose construction workers or members of the public to hazards. However, with implementation of Mitigation Measures HAZ-1a, HAZ-1b, UT-6a, UT-6c, TRANS-1a, and environmental commitments (discussed previously for Impacts HAZ-1 through HAZ-6, and in detail in Appendix 3B, *Environmental Commitments*), the potential for adverse effects would be reduced. Additionally, the proposed conservation measures would be designed to avoid sensitive receptors and would minimize, to the extent feasible, the need to acquire or traverse areas where the presence of hazardous materials is suspected or has been verified. Thus, this effect would not be adverse.

Potential safety hazards to air traffic related to the potential for increased bird-aircraft strikes as a result of creating or enhancing wildlife habitat are discussed under Impact HAZ-8.

***CEQA Conclusion*:** The potential for impacts related to the release and exposure of workers and the public to hazardous substances or conditions during construction, operation, and maintenance of CM2–CM11, CM13, CM14, CM16, and CM18 could be significant. Conservation component implementation would involve extensive use of heavy equipment during construction, and/or the use and/or transport of hazardous chemicals during operations and maintenance (e.g., herbicides for nonnative vegetation control). These chemicals could be inadvertently released, exposing construction workers or the public to hazards. Construction of restoration projects on or near existing agricultural and industrial land may result in a conflict or exposure to known hazardous materials, and the use of high-profile equipment in close proximity to airport runways could result in hazards to air traffic. However in addition to implementation of SWPPPs, HMMPs, SPCCPs, SAPs, and a FPCP, Mitigation Measures HAZ-1a, HAZ-1b, UT-6a, UT-6c, and TRANS-1a would be implemented, all of which would ensure that these potential impacts are less than significant.

Mitigation Measure HAZ-1a: Perform Preconstruction Surveys, Including Soil and Groundwater Testing, at Known or Suspected Contaminated Areas within the Construction Footprint, and Remediate and/or Contain Contamination

Please refer to Mitigation Measure HAZ-1a under Impact HAZ-1 in the discussion of Alternative 1A.

Mitigation Measure HAZ-1b: Perform Pre-Demolition Surveys for Structures to Be Demolished within the Construction Footprint, Characterize Hazardous Materials and Dispose of Them in Accordance with Applicable Regulations

Please refer to Mitigation Measure HAZ-1b under Impact HAZ-1 in the discussion of Alternative 1A.

Mitigation Measure UT-6a: Verify Locations of Utility Infrastructure

Please see Mitigation Measure UT-6a under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure UT-6c: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Worker and Public Health and Safety

Please see Mitigation Measure UT-6c under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management Plan

Please see Mitigation Measure TRANS-1a under Impact TRANS-1 in the discussion of Alternative 1A in Chapter 19, *Transportation*.

Impact HAZ-8: Increased Risk of Bird–Aircraft Strikes during Implementation of Conservation Measures That Create or Improve Wildlife Habitat

NEPA Effects: The potential for implementation of conservation measures that create or improve wildlife habitat (CM2–CM11) to create hazards air and public safety through increased bird-aircraft strikes would be similar to the potential effects described under Alternative 1A. Potential variation from Alternative 1A would be anticipated to be minor but could result from the selection of different

areas for restoration activities based on the location of the physical water conveyance features associated with each alternative. Such variation may result greater or less opportunity for bird-aircraft strikes depending on the location's proximity to airport flight zones. The following airports, because they are in relatively close proximity (within 2 miles) to the ROAs and/or conservation zones could potentially be affected: Travis Air Force Base; Rio Vista Municipal Airport; Funny Farm Airport; Sacramento International Airport, and Byron Airport.

The effect of increased bird-aircraft strikes during implementation of CM2–CM11 would be adverse because it could potentially result in an air and public safety hazard. Mitigation Measure HAZ-8 would reduce the severity of this effect through the development and implementation of measures to reduce, minimize and/or avoid wildlife hazards on air safety. However, this effect is would remain adverse.

CEQA Conclusion: Implementation of CM2–CM11, because they would create or improve wildlife habitat, could potentially attract waterfowl and other birds to areas in proximity to existing airport flight zones, and thereby result in an increase in bird-aircraft strikes, which could result in significant impacts on public safety. The following airports, because they are in relatively close proximity (within 2 miles) to the ROAs and/or conservation zones could potentially be affected: Travis Air Force Base; Rio Vista Municipal Airport; Funny Farm Airport; Sacramento International Airport, and Byron Airport. Mitigation Measure HAZ-8 could reduce the severity of this impact through the ultimate development and implementation of measures to reduce, minimize and/or avoid wildlife hazards on air safety, but not to a less-than-significant level. As such, the impact is significant and unavoidable.

Mitigation Measure HAZ-8: Consult with Individual Airports and USFWS, and Relevant Regulatory Agencies

Please refer to Mitigation Measure HAZ-8 under Impact HAZ-8 in the discussion of Alternative 1A. This mitigation measure will ensure that the potential for increased bird – aircraft strikes as a result of implementing CM2–CM11 in the vicinity of airports are minimized to the greatest extent possible.

24.3.3.16 Alternative 9—Through Delta/Separate Corridors (15,000 cfs; Operational Scenario G)

Impact HAZ-1: Create a Substantial Hazard to the Public or the Environment through the Release of Hazardous Materials or by Other Means during Construction of the Water Conveyance Facilities

NEPA Effects: This impact describes and addresses, for the duration of construction of the water conveyance facilities, potential hazards associated with the routine use of hazardous materials; existing contaminants in soil, groundwater or sediment; hazardous constituents present in dredged sediments; infrastructure containing hazardous materials; and the routine transport of hazardous materials.

Under Alternative 9, three locations would be designated as temporary fueling stations, each occupying 2 acres and located adjacent to concrete batch plants. Potential hazards resulting from these facilities would be similar to those described under Alternative 1A but would be reduced in their intensity because three fueling stations would be used instead of five. Additionally, these potential hazards would occur in different locations. Fueling stations would be established in

currently rural areas with one just northwest of the town of Locke, one near the San Joaquin River on the eastern side of Webb Tract near Potato Slough, and one on State Highway 4, approximately 3 miles northeast of Clifton Court Forebay. Fueling station locations are shown in Figure 24-7 and in Figure M3-5 in the Mapbook Volume.

In addition to fuel use and bulk fuel storage, construction activities and maintenance of construction equipment for the water conveyance facilities under this alternative would include storage and use of similar hazardous materials—with associated potential for spills and releases—as described under Alternative 1A. To the extent that activities would require different materials and different amounts of materials for construction of operable barriers and intakes structures under this alternative, the intensity of this effect would be different. This alternative would, however, avoid hazards associated with construction of three intake facilities, three pumping plants, pipelines, and tunnels. However, in-river facility construction associated with operable barriers and intakes would be more extensive and widespread under this alternative, which could result in a greater potential for hazardous materials to be spilled or otherwise released to the environment, particularly to water bodies. Construction equipment maintenance is expected to be performed in the field and in central maintenance facilities operated by contractors during construction of this alternative. While equipment could be maintained at any work area identified for this alternative, the highest risk of hazards related to equipment maintenance activities would be anticipated to occur at those sites where duration and intensity of construction activities would be greatest, including intake sites (Delta Cross Channel and Georgiana Slough) and operable barrier sites (a detailed depiction of the Through Delta/Separate Corridors alignment features is provided in Figure M3-5 in the Mapbook Volume).

The potential hazards resulting from construction activities near known (see Impact HAZ-3 for this alternative below) or unknown SOCs would be similar to those described under Alternative 1A. Additionally, contaminated soil, groundwater, or sediments may be encountered during dredging and other in-river construction activities. Approximately 11.9 million cubic yards of dredged sediment spoils are expected to be generated in the southern portion of the study area, and additional sediment would be generated during construction of intakes, operable barriers, and other in-channel infrastructure (California Department of Water Resources 2010b:16-5). Contaminated sediments (e.g., persistent pesticide- and mercury-contaminated sediments) may be encountered during in-river construction (e.g., cofferdam construction at fish screen sites). As indicated under Impact HAZ-1 for Alternative 1A, concentrations of potential contaminants in the sediments where in-river construction activities would be taking place are not known; therefore, the associated risk cannot be identified. Generally, mobilization of potentially contaminated sediments would be directly related to levels of turbidity and suspended sediments resulting from construction. Although resulting turbidity has not been modeled, it is anticipated to be low given the permit requirements for controls stipulating that dredging activities be conducted and monitored such that turbidity not increase in receiving waters, measured 300 feet downstream or that silt curtains be used to control turbidity and reduce the associated mobilization of potentially contaminated sediments. Mobilization of potentially contaminated sediments are unlikely to be a hazard concern for construction workers because it is not expected that workers would be in direct contact with sediments during in-river construction activities. Similarly, contaminated sediments are unlikely to pose a hazard to the general public or the environment because suspended sediment would be confined to the areas of in-river disturbance via the incorporation of BMPs, such as the installation of silt curtains and the performance of in-water work during low flow periods (see Appendix 3B,

Environmental Commitments), and because disturbance would be temporary (occurring during in-river work and potentially for a few hours following cessation of in-river construction activities).

Infrastructure and structures in the study area containing hazardous materials cross the Alternative 9 water conveyance alignment and construction footprint (Figures 24-3 and 24-6). Five overhead high-voltage electrical transmission lines, two petroleum product pipelines, and potentially local power and gas lines cross the construction footprint for the proposed water conveyance facilities. Table 24-3 provides the number and type of regional electrical transmission lines and pipelines crossing each alternative alignment. Local power lines and residential gas distribution lines may be present in the area. Construction of the proposed water conveyance facilities under Alternative 9 (particularly the canal and intake facilities) would also conflict with a substantial number of existing structures throughout the alignment, but particularly on and near Hammer Island. Construction of the water conveyance facility under this alternative would require the removal 255 structures, of which 74 are residential and 93 are storage/support structures. This would be necessary for the modification of channels and the construction of new levees south of Clifton Court Forebay. These structures may contain hazardous materials that would require proper handling and disposal, if demolition is necessary. Disturbance of this infrastructure during construction of the water conveyance facilities could result in hazards similar to those described under Alternative 1A. As described for Impact HAZ-1 under Alternative 1A, Mitigation Measure HAZ-1b would be implemented by DWR to ensure that there are no adverse effects related to hazardous materials from structure demolition.

Risks associated with the transportation of hazardous materials via truck, trains, and ships would be similar to those described under Alternative 1A but would occur in different areas. State Highway 4, a designated hazardous materials transportation route, crosses the alignment for Alternative 9 at Middle River (Figure 24-2 and in Table 24-4). Rerouting vehicular traffic carrying hazardous materials during construction of the water conveyance facilities could increase the risk of accidental release due to inferior road quality or lack of driver familiarity with the modified routes. This includes the risk of release of hazardous products or wastes being transported routinely or specifically for construction of the water conveyance facilities, and the corresponding risk of release of fuels (gasoline and diesel) from vehicular accidents. No rerouting of traffic on this highway is anticipated. Other road routes anticipated to be affected during construction of the water conveyance facilities are listed in Chapter 19, *Transportation*. As described in Chapter 19, *Transportation*, under Mitigation Measure TRANS-1a, a site-specific construction traffic management plan would be prepared and implemented prior to initiation of water conveyance facilities construction. This plan would include stipulations and BMPs to avoid or reduce potential circulation effects, such as such as providing signage, barricades, and flag people around construction work zones; notifying the public, including schools and emergency service providers of construction activities that could affect transportation; providing alternate access routes, if necessary, to maintain continual circulation in and around construction zones; and requiring direct haulers to pull over in the event of an emergency, which would help ensure that there are no interferences with the safe transport of hazardous materials and no associated increases in safety hazards. In-water construction of the operable barriers and barge unloading facilities could result in impediments to marine traffic on the San Joaquin River, which could have the potential to introduce hazards in the case of inadvertent collisions, and releases of hazardous materials (e.g., fuels) from barges or other watercraft. However, as described under Impact HAZ-1 for Alternative 1A, BMPs implemented as part of a Barge Operations Plan (for detail see Appendix 3B, *Environmental Commitments*) would avoid and/or minimize this potential adverse effect. Train operations along

the BNSF Railway/Amtrak San Joaquin Line could be affected during construction of the proposed operable barrier at the Middle River entrance of the Railroad Cut (between the Middle River and the Old River) under this alternative. To avoid potential adverse effects on rail modes of transportation, DWR would consult with railroad owners and would develop and implement rail construction management plans, as necessary, through implementation of Mitigation Measure TRANS-6 (described in Chapter 19, *Transportation*). In summary, during construction of the water conveyance facilities there is the potential for direct effects on construction personnel, the public and the environment associated with the routine use of hazardous materials; the inadvertent release of existing contaminants in soil and groundwater, or hazardous materials in existing infrastructure to be removed; disturbance of electrical transmission lines; and potentially hazardous constituents present in dredged sediments. Additionally, there is the potential for the construction of the water conveyance facilities to indirectly result in the release of hazardous materials through the disruption of existing road, rail, or river hazardous materials transport routes because construction would occur in the vicinity of one designated hazardous materials transport route, one railroad corridor and waterways with barge traffic, and would require construction traffic that could disrupt these routes, which, were this to occur, would be considered an adverse effect.

However, as noted in the discussion of Impact HAZ-1 for Alternative 1A, project design will minimize, to the extent feasible, the need to acquire or traverse areas where the presence of hazardous materials is suspected or has been verified. Additionally, environmental commitments would be implemented, including, but not limited to BMPs implemented as part of SWPPPs, SPCCPs, SAPs and HMMPs, and a Barge Operations Plan. Together, the environmental commitments would reduce these potential hazards associated with water conveyance facilities construction. Additionally, the implementation of Mitigation Measures HAZ-1a and HAZ-1b; UT-6a and UT-6c (described in Chapter 20, *Public Services and Utilities*), and TRANS-1a (described in Chapter 19, *Transportation*) would further reduce the potential severity of this impact. As such, construction of the water conveyance facilities would not create a substantial hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or the upset/accidental release of these materials. Thus, this effect would not be adverse.

CEQA Conclusion: During construction of the water conveyance facilities there is the potential for direct significant impacts on construction personnel, the public and the environment associated with a variety of hazardous physical or chemical conditions. Such conditions may arise as a result of the intensity and duration of construction activities at the intakes, operable barriers, and channel modification, and because of the hazardous materials that would be used in these areas during construction. Potential hazards would include the routine use of hazardous materials (as defined by Title 22 of the California Code of Regulations, Division 4.5); the inadvertent release of existing contaminants in soil, sediment and groundwater, or hazardous materials in existing infrastructure to be removed; disturbance of electrical transmission lines; and hazardous constituents present in dredged sediments. Additionally, there is the potential for the construction of the water conveyance facility to indirectly result in the release of hazardous materials through the disruption of existing road, rail, or river hazardous materials transport routes because construction would occur in the vicinity of one designated hazardous materials transport route, one railroad corridor and waterways with barge traffic, and would require construction traffic that could disrupt these routes. For these reasons, this is considered a significant impact. However, with the implementation of the previously described environmental commitments for Impact HAZ-1 under Alternative 1A and of Mitigation Measures HAZ-1a and HAZ-1b, UT-6a and UT-6c (described in Chapter 20, *Public Services and Utilities*), and TRANS-1a (described in Chapter 19, *Transportation*), construction of the water

conveyance facilities would not create a substantial hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or the upset/accidental release of these materials. The severity of this impact would be reduced with the implementation of these environmental commitments and mitigation measures by identifying and describing potential sources of hazardous materials so that releases can be avoided and materials can be properly handled; detailing practices to monitor pollutants and control erosion so that appropriate measures are taken; implementing onsite features to minimize the potential for hazardous materials to be released to the environment or surface waters; minimizing risk associated with the relocation of utility infrastructure; and coordinating the transport of hazardous materials to reduce the risk of spills. Accordingly, these impacts would be reduced to a less-than-significant level.

Mitigation Measure HAZ-1a: Perform Preconstruction Surveys, Including Soil and Groundwater Testing, at Known or Suspected Contaminated Areas within the Construction Footprint, and Remediate and/or Contain Contamination

Please refer to Mitigation Measure HAZ-1a under Impact HAZ-1 in the discussion of Alternative 1A.

Mitigation Measure HAZ-1b: Perform Pre-Demolition Surveys for Structures to Be Demolished within the Construction Footprint, Characterize Hazardous Materials and Dispose of Them in Accordance with Applicable Regulations

Please refer to Mitigation Measure HAZ-1b under Impact HAZ-1 in the discussion of Alternative 1A.

Mitigation Measure UT-6a: Verify Locations of Utility Infrastructure

Please see Mitigation Measure UT-6a under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure UT-6c: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Worker and Public Health and Safety

Please see Mitigation Measure UT-6c under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management Plan

Please see Mitigation Measure TRANS-1a under Impact TRANS-1 in the discussion of Alternative 1A in Chapter 19, *Transportation*.

Impact HAZ-2: Expose Sensitive Receptors Located within 0.25 Mile of a Construction Site to Hazardous Materials, Substances, or Waste during Construction of the Water Conveyance Facilities

NEPA Effects: The potential for hazardous materials or substances to affect sensitive receptors would be similar in nature to those described for Alternative 1A; however, implementation of this alternative would potentially affect parks, schools, or hospitals in different locations. While there are no parks or hospitals located within 0.25 mile of Alternative 9, Walnut Grove Elementary School in

Walnut Grove is within 0.25 mile of the construction footprint, near the proposed Georgiana Slough and Delta Cross Channel screened intakes, as shown in Figure 24-8.

Construction of the intakes would require the use of heavy construction equipment, including cranes, excavators, loaders, and off-road trucks, which would require the routine use of hazardous materials such as fuels, solvents, and lubricants. Construction of the intakes and construction-related activities, such as fueling, excavation, and site clearing, could potentially release hazardous materials into the environment through equipment leaks and upset and accident conditions involving accidental spills. However, the inadvertent release of the types and quantities of hazardous materials that would be used during construction activities in this area would likely only have the potential to result in minor, temporary hazards to workers immediately adjacent to these releases. Because chemicals such as fuels and solvents that could be used in this area would be used in small quantities, and any inadvertent release would be localized, and because BMPs to minimize the potential for the accidental release of hazardous materials and to contain and remediate hazardous spills, as part of the SWPPPs, SPCCPs, and HMMPs, would be implemented, as described in Section 24.3.3.2 under "Routine Use of Hazardous Materials" for Alternative 1A, and as set forth in Appendix 3B, *Environmental Commitments*, children and staff at Walnut Grove Elementary School would not be exposed to hazardous materials, substances, or waste during construction of the water conveyance facilities. Therefore, there would be no adverse effect. Potential air quality effects on sensitive receptors are discussed in Chapter 22, *Air Quality and Greenhouse Gases.*

***CEQA Conclusion*:** Walnut Grove Elementary School is within 0.25 mile of the construction footprint for Alternative 9 near the sites of the proposed intakes at the Delta Cross Channel and Georgiana Slough. Construction of the intakes and construction-related activities, such as fueling, excavation, and site clearing, could potentially release hazardous materials into the environment through equipment (e.g., dump trucks, diggers, cranes, and back hoes) equipment leaks and upset and accident conditions involving accidental spills. However, the inadvertent release of the types and quantities of hazardous materials that would be used during construction activities in this area would likely only have the potential to result in minor, temporary hazards to workers immediately adjacent to these releases. Risks would also be reduced because chemicals such as fuels and solvents that could be used in this area would be used in small quantities, any inadvertent release would be localized, and because BMPs would be implemented to minimize the potential for the accidental release of hazardous materials and to contain and remediate hazardous spills, as part of the SWPPPs, SPCCPs, and HMMPs (as discussed under Impact HAZ-1 for Alternative 1A and in Appendix 3B, *Environmental Commitments*). Further, the school is not in close enough proximity to these proposed construction areas to be affected by potential hazards such as minor leaks or spills of hazardous materials. Therefore, school children and staff at Walnut Grove Elementary School would not be at risk or affected by exposure to hazardous materials, substances, or waste during construction of the water conveyance facilities, and as such, this impact is less than significant. No mitigation is required. Potential air quality effects on sensitive receptors are discussed in Chapter 22, *Air Quality and Greenhouse Gases.*

Impact HAZ-3: Potential to Conflict with a Known Hazardous Materials Site and, as a Result, Create a Significant Hazard to the Public or the Environment

NEPA Effects: As shown in Table 24-5 and in Figure 24-4, four SOCs would be located within 0.5 mile of the construction footprint for Alternative 9. For those hazardous materials sites identified within the 0.5-mile radius but which are not within the construction footprint, there would be no potential for construction of the water conveyance facilities to disturb those sites such that there

would be a re-release of hazardous materials that would create a hazard for the public or environment. However, one of these sites is within the Delta Cross Channel intake construction footprint of Alternative 9. This is the site of the former Unocal Bulk Plant—a bulk storage and distribution facility for petroleum products (1922 to 1980) with 11 ASTs and underground pipelines. The latest monitoring report from third quarter 2008 indicates that groundwater at this site contains petroleum product concentrations exceeding cleanup standards. Because dewatering wells would likely be necessary during construction of the Delta Cross Channel intake, it is possible that the dewatering system would draw up contaminated groundwater associated with the Unocal Bulk Plant site. If contaminated groundwater was drawn up and released to the environment, this would be an adverse effect. As a result, it would be necessary to characterize the groundwater drawn through the dewatering system to determine disposal options to avoid any adverse effect on the environment via improper disposal of contaminated groundwater. Implementation of Mitigation Measure HAZ-1a, as described for Impact HAZ-1 under Alternative 1A, would avoid this adverse effect by requiring soil and groundwater testing at this site, and containment and/or remediation if contamination is present. Therefore, there would be no adverse effect. There are no "Cortese List" sites within the construction footprint of the Alternative 9 water conveyance facilities. The potential for encountering unknown hazardous materials sites during the course of construction is discussed under Impact HAZ-1.

CEQA Conclusion: The former Unocal Bulk Plant is within the construction footprint for the Delta Cross Channel intake under Alternative 9. Recent monitoring indicates that groundwater at Unocal Bulk Plant site contains concentrations of petroleum products exceeding cleanup standards. Because dewatering wells would likely be necessary during construction of the Delta Cross Channel intake, it is possible that the dewatering system would draw up contaminated groundwater associated with the Unocal Bulk Plant site. The potential for a significant hazard to the public or the environment as a result of the potential re-release of hazardous materials contained in groundwater during construction near this hazardous materials site would be less than significant with implementation of Mitigation Measure HAZ-1a, which would require soil and groundwater testing and containment and/or remediation if contamination is present; thus, improper disposal of contaminated groundwater or soil would be avoided and the public and environment would not be affected. The potential for construction activities to encounter unknown sites hosting hazardous materials is described under Impact HAZ-1.

Mitigation Measure HAZ-1a: Perform Preconstruction Surveys, Including Soil and Groundwater Testing, at Known or Suspected Contaminated Areas within the Construction Footprint, and Remediate and/or Contain Contamination

Please refer to Mitigation Measure HAZ-1a under Impact HAZ-1 in the discussion of Alternative 1A. Implementation of this measure will result in the successful remediation or containment of all known or suspected contaminated areas, as applicable, within the construction footprint, which would prevent the release of hazardous materials from these areas into the environment.

Impact HAZ-4: Result in a Safety Hazard Associated with an Airport or Private Airstrip within 2 Miles of the Water Conveyance Facilities Footprint for People Residing or Working in the Study Area during Construction of the Water Conveyance Facilities

NEPA Effects: As previously described, development around an airport, particularly in the approach and departure paths, can create obstructions in the airspace traversed by an approaching or departing aircraft. Additionally, certain land uses have the potential to create hazards to aircraft

such as a distracting glare, smoke, steam, or invisible heat plumes. Safety impacts from aircraft accidents near airports are typically avoided by specifying the types of land uses allowed, and thereby limiting the number of people who would be exposed to the risk of an accident, and avoiding land uses that could create hazards to air traffic. Airspace protection primarily involves limitations on the height of objects on the ground near airports.

The nature of safety hazards related to air travel would be similar to those described under Alternative 1A. However, under Alternative 9, the water conveyance facilities would be within 2 miles of the Walnut Grove and Spezia Airports, southwest of Walnut Grove, as shown in Figure 24-9. These airports are designated private airports. Walnut Grove Airport is within 2 miles of a proposed borrow and/or spoils area near the intake proposed at Georgiana Slough. Spezia Airport is within 2 miles of several proposed features for the water conveyance facility under Alternative 9: intake and intake work area at Georgiana Slough; borrow and/or spoils area; 12 kV transmission line; and a fish screen work area. With the exception of the intake, potentially the intake work area, and the fish screen (pile driving), construction of these features or work in these areas would not require the use of high-profile (200 feet or taller) construction equipment. It is not yet known what the maximum height of the high-profile construction equipment that would be used would be. Tower cranes, for example, may be required, and a typical tower crane can have a total height greater than 200 feet—a height that could be considered an obstruction or hazard to navigable air space if located near an airport. However, because, as required, Caltrans' Division of Aeronautics would be informed in writing by DWR of the construction of any state building or enclosure within 2 miles of these airports, and because DWR would adhere to any recommendations resulting from Caltrans' review, there would be no adverse effects on air safety.

CEQA Conclusion*:* High-profile construction equipment (200 feet or taller), such as tall cranes, for installation of intakes, and pile drivers, such as would be used during the installation of the fish screen at Georgiana Slough construction of the intakes, have the potential to result in safety hazards to aircraft during takeoff and landing if the equipment is operated too close to runways. Two private airports (Spezia and Walnut Grove Airports) are located within 2 miles of the construction footprint of Alternative 9. DWR would coordinate with Caltrans' Division of Aeronautics prior to initiating construction and comply with its recommendations based on their investigation(s). These recommendations, which could include limitations necessary to minimize potential problems, such as the use of temporary construction equipment, supplemental notice requirements, and marking and lighting high-profile structures would reduce the potential for impacts on air safety. Accordingly, this impact would be less than significant. No mitigation is required.

Impact HAZ-5: Expose People or Structures to a Substantial Risk of Property Loss, Personal Injury or Death Involving Wildland Fires, Including Where Wildlands Are adjacent to Urbanized Areas or Where Residences Are Intermixed with Wildlands, as a Result of Construction, and Operation and Maintenance of the Water Conveyance Facilities

NEPA Effects: Under Alternative 9, potential hazards related to wildland fire would be similar to those described under Impact HAZ-5 for Alternative 1A but would carry the potential to affect different areas. As shown in Figure 24-10, no portion of Alternative 9 is located in or near an area designated as a High or Very High Fire Hazard Severity Zone. Figure 24-10 indicates the northernmost and southernmost portions of Alternative 9 would be near Moderate Fire Hazard Severity Zones. The study area mainly consists of agricultural lands with pockets of rural residential land uses that are not adjacent to wildlands, as well as residential areas that are intermixed with wildlands.

As described under Impact HAZ-5 for Alternative 1A and in Appendix 3B, *Environmental Commitments*, BMPs would be implemented, as part of a FPCP, to prevent and control wildland fires during construction, and operation and maintenance of the water conveyance facilities in full compliance with Cal-OSHA fire prevention and safety standards. Development and implementation of the FPRP would help ensure that people or structures would not be subject to a significant risk of loss, injury or death involving wildland fires. Therefore, this effect would not be adverse.

CEQA Conclusion: People or structures would not be subject to a substantial risk of loss, injury or death involving wildland fires during construction or operation and maintenance of the water conveyance facilities because the BDCP would comply with Cal-OSHA fire prevention and safety standards; would implement standard fire safety, control and prevention measures, as part of a FPCP; and because the water conveyance facilities would not be located in a High or Very High Fire Hazard Severity Zone. Therefore, this impact would be less than significant. No mitigation is required.

Impact HAZ-6: Create a Substantial Hazard to the Public or the Environment through the Release of Hazardous Materials or by Other Means during Operation and Maintenance of the Water Conveyance Facilities

NEPA Effects: During long-term operation and maintenance of the water conveyance facilities, the transport, storage, and use of chemicals or hazardous waste materials may be required. In many cases, potential hazards would occur in a similar manner to those described for Alternative 1A. However, hazards would differ in intensity based upon the different structures and locations that compose the water conveyance facilities under this alternative. Operation and maintenance of several water conveyance facilities (e.g., intake screens, pumps, and operable gates) would require the use of hazardous materials, such as fuel, oils, grease, solvents, and paints. For example, planned maintenance at pumping facilities would include checking oil levels or replacing oil in the pumps and greasing pump bearings. Additionally, routine facility maintenance would include painting of pumping plants and appurtenant structures, cleaning, repairs, and other routine tasks that ensure the facilities are operated in accordance with design standards. Replacement of erosion protection on the levees and embankments would also occur periodically. The potential severity of hazards arising from the collection of sediment in pumping plants is anticipated to be significantly smaller than described under Alternative 1A because of the significantly smaller collective diversion capacity of the plants that would be built for Alternative 9 (two plants, each diverting a maximum of 250 cfs, rather than five plants). However, dredging activities associated with maintenance of intakes and operable barriers, could produce a considerable volume of potentially-contaminated sediment. To ensure that potentially contaminated sediment from maintenance dredging activities at the intakes would not adversely affect soil, groundwater or surface water, a SAP would be implemented prior to any dredging activities, as described under Impact HAZ-1 for this alternative. All sediment would be characterized chemically prior to reuse to ensure that reuse of this material would not result in a hazard to the public or the environment.

As previously discussed, Walnut Grove Elementary School is within 0.25 mile of the construction footprint for Alternative 9, between the two proposed intakes at the Delta Cross Channel and Georgiana Slough. There are no other sensitive receptors (i.e., hospitals and parks) located within 0.25 mile of this alternative. As discussed under Impact HAZ-2, should hazardous materials be inadvertently released during routine operations and maintenance at the constructed facilities due to the improper handling of hazardous materials or from vehicles traveling to or from the facilities, there would be a potential risk to school children and staff. However, because the types of

potentially hazardous materials used during routine operation and maintenance activities would be used in relatively small quantities and would be localized if they were inadvertently released, and because BMPs, as would be implemented in SWPPPs, SPCCPs, and HMMPs, (as detailed in Appendix 3B and described under Impact HAZ-1 for Alternative 1A), would be in place to help prevent the inadvertent release of these materials and to contain and remediate spills, there would be minimal risk to school children and staff within 0.25 mile within the construction footprint.

The locations of airports with respect to Alternative 9 are provided in Figure 24-9. The Walnut Grove and Spezia Airports are within 2 miles of the Alternative 9 construction footprint (Figure 24-9 and Table 24-6). With the exception of power transmission lines supplying power to pumps and other equipment used for conveyance facilities operation and maintenance, water conveyance facilities operations and maintenance are not anticipated to require high-profile equipment (i.e., equipment with a vertical reach of 200 feet or more), the use of which near an airport could result in an adverse effect to aircraft. DWR would adhere to all applicable FAA regulations (14 CFR 77) and coordinate with Caltrans' Division of Aeronautics prior to initiating maintenance activities requiring high-profile equipment to avoid adverse effects on air safety. Compliance with these recommendations, which could include limitations necessary to minimize potential problems, such as the use of temporary construction equipment, supplemental notice requirements, and marking and lighting high-profile structures would reduce the potential for impacts on air safety.

***CEQA Conclusion*:** The accidental release of hazardous materials to the environment during operation and maintenance of the water conveyance facilities and the potential interference with air safety through the use of high-profile equipment for maintenance of proposed transmission lines could have impacts on the public and environment. However, implementation of the BMPs and other activities required by SWPPPs, HMMPs, SPCCPs, and SAPs as well as adherence to all applicable FAA regulations (14 CFR Part 77) and coordination/compliance with Caltrans' Division of Aeronautics when performing work with high-profile equipment within 2 miles of an airport, which would include implementation of recommendations to provide supplemental notice and/or equip high-profile structures with marking and lighting, would ensure that operation and maintenance of the water conveyance facilities would not create a substantial hazard to the public, environment or air traffic safety. Therefore, this impact would be less than significant.

Impact HAZ-7: Create a Substantial Hazard to the Public or the Environment through the Release of Hazardous Materials or by Other Means as a Result of Implementing Conservation Measures CM2-CM11, CM13, CM14, CM16 and CM18

NEPA Effects: The potential for construction, operation, and maintenance activities associated with the implementation of conservation measures (CM2–CM11, CM13, CM 14, CM16, and CM18) to create hazards to workers, the public, and the environment would be similar to those described under Alternative 1A. Hazardous materials associated with the operation of construction equipment could be released into the environment in the course of the materials' routine transport, use, or disposal. Releases could also occur as a result of accidental circumstances. Similarly, construction activities could encounter known or unknown hazardous materials sites located on or in the vicinity of construction sites, creating the potential for their disturbance and release. Other activities, including the intentional demolition of existing structures (e.g., buildings) and reuse of spoil, dredged material and/or RTM, would also present the potential to generate hazards or release hazardous materials. However, prior to the reuse of spoils, dredged material or RTM, these materials would undergo chemical characterization, as described in Appendix 3B, *Environmental Commitments*, to ensure that they are not creating a hazard to the public and environment.

Further, other potential hazards that could result from implementing conservation measures include the possible release of hazardous substances in proximity to sensitive receptors; damage or disruption of existing infrastructure such that hazardous conditions were created; the accidental release of hazardous substances during operation and maintenance (e.g., herbicides for nonnative vegetation control); the release, in the short-term, of pesticides from former agricultural lands as a result of wetland and floodplain restoration; the potential for safety hazards related to construction in the vicinity of an airport; and the potential for wildfire hazards in the vicinity of construction sites.

The potential for these effects is considered adverse because implementation of conservation measures would involve extensive activities that could unintentionally result in the release of hazardous substances or that could expose construction workers or members of the public to hazards. However, with implementation of Mitigation Measures HAZ-1a, HAZ-1b, UT-6a, UT-6c, TRANS-1a, and environmental commitments (discussed previously for Impacts HAZ-1 through HAZ-6, and in detail in Appendix 3B, *Environmental Commitments*), the potential for adverse effects would be reduced. Additionally, the proposed conservation measures would be designed to avoid sensitive receptors and would minimize, to the extent feasible, the need to acquire or traverse areas where the presence of hazardous materials is suspected or has been verified. Therefore, this effect would not be adverse.

Potential safety hazards to air traffic related to the potential for increased bird-aircraft strikes as a result of creating or enhancing wildlife habitat are discussed under Impact HAZ-8.

***CEQA Conclusion*:** The potential for impacts related to the release and exposure of workers and the public to hazardous substances or conditions during construction, operation, and maintenance of CM2–CM11, CM13, CM14, CM16, and CM18 could be significant. Conservation component implementation would involve extensive use of heavy equipment during construction, and/or the use and/or transport of hazardous chemicals during operations and maintenance (e.g., herbicides for nonnative vegetation control). These chemicals could be inadvertently released, exposing construction workers or the public to hazards. Construction of restoration projects on or near existing agricultural and industrial land may result in a conflict or exposure to known hazardous materials, and the use of high-profile equipment in close proximity to airport runways could result in hazards to air traffic. However, in addition to implementation of SWPPPs, SPCCPs, SAPs, HMMPs, and fire safety, prevention and control measures as part of a FPCP, Mitigation Measures HAZ-1a, HAZ-1b, UT-6a, UT-6c, and TRANS-1a would be implemented, all of which would ensure that these potential impacts are less than significant.

Mitigation Measure HAZ-1a: Perform Preconstruction Surveys, Including Soil and Groundwater Testing, at Known or Suspected Contaminated Areas within the Construction Footprint, and Remediate and/or Contain Contamination

Please refer to Mitigation Measure HAZ-1a under Impact HAZ-1 in the discussion of Alternative 1A.

Mitigation Measure HAZ-1b: Perform Pre-Demolition Surveys for Structures to Be Demolished within the Construction Footprint, Characterize Hazardous Materials and Dispose of Them in Accordance with Applicable Regulations

Please refer to Mitigation Measure HAZ-1b under Impact HAZ-1 in the discussion of Alternative 1A.

Mitigation Measure UT-6a: Verify Locations of Utility Infrastructure

Please see Mitigation Measure UT-6a under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure UT-6c: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Worker and Public Health and Safety

Please see Mitigation Measure UT-6c under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management Plan

Please see Mitigation Measure TRANS-1a under Impact TRANS-1 in the discussion of Alternative 1A in Chapter 19, *Transportation*.

Impact HAZ-8: Increased Risk of Bird–Aircraft Strikes during Implementation of Conservation Measures That Create or Improve Wildlife Habitat

NEPA Effects: The potential for implementation of conservation measures that create or improve wildlife habitat (CM2–CM11) to create hazards air and public safety through increased bird-aircraft strikes would be similar to the potential effects described under Alternative 1A. Potential variation from Alternative 1A would be anticipated to be minor but could result from the selection of different areas for restoration activities based on the location of the physical water conveyance features associated with each alternative. Such variation may result greater or less opportunity for bird-aircraft strikes depending on the location's proximity to airport flight zones. The following airports, because they are in relatively close proximity (within 2 miles) to the ROAs and/or conservation zones could potentially be affected: Travis Air Force Base; Rio Vista Municipal Airport; Funny Farm Airport; Sacramento International Airport, and Byron Airport.

The effect of increased bird-aircraft strikes during implementation of CM2–CM11 would be adverse because it could potentially result in an air and public safety hazard. Mitigation Measure HAZ-8 would reduce the severity of this effect through the development and implementation of measures to reduce, minimize and/or avoid wildlife hazards on air safety. However, this effect is would remain adverse.

CEQA Conclusion: Implementation of CM2–CM11, because they would create or improve wildlife habitat, could potentially attract waterfowl and other birds to areas in proximity to existing airport flight zones, and thereby result in an increase in bird-aircraft strikes, which could result in significant impacts on public safety. The following airports, because they are in relatively close proximity (within 2 miles) to the ROAs and/or conservation zones could potentially be affected: Travis Air Force Base; Rio Vista Municipal Airport; Funny Farm Airport; Sacramento International Airport, and Byron Airport. Mitigation Measure HAZ-8 could reduce the severity of this impact through the ultimate development and implementation of measures to reduce, minimize and/or avoid wildlife hazards on air safety, but not to a less-than-significant level. As such, the impact is significant and unavoidable.

Mitigation Measure HAZ-8: Consult with Individual Airports and USFWS, and Relevant Regulatory Agencies

Please refer to Mitigation Measure HAZ-8 under Impact HAZ-8 in the discussion of Alternative 1A. This mitigation measure will ensure that the potential for increased bird – aircraft strikes as a result of implementing CM2–CM11 in the vicinity of airports are minimized to the greatest extent possible.

24.3.3.17 Cumulative Analysis

Methods for Cumulative Analysis

This cumulative impact analysis considers past, present, and reasonably foreseeable future projects that could affect the same resources and, where relevant, occur within the same time frame as the BDCP alternatives. When the effects of the BDCP alternatives, as they relate to hazards and hazardous materials, are considered in connection with the potential effects of projects listed in Table 24-7, the effects could be cumulatively adverse. Projects in Table 24-7 are provided as examples of projects that could potentially result in adverse effects related to hazards and hazardous materials during construction and/or operation and maintenance. Additional projects considered in the cumulative analysis are provided in Table 3D-6 (Appendix 3D, *Defining Existing Conditions, the No Action/No Project, and Cumulative Impact Conditions*).

Table 24-7. Effects related to Hazards and Hazardous Materials from the Plans, Policies, and Programs Considered for Cumulative Analysis

Agency	Program/ Project	Status	Description of Program/Project	Effects related to Hazards and Hazardous Materials
Department of Water Resources	North Delta Flood Control and Ecosystem Restoration Project	Final EIR complete	Project implements flood control and ecosystem restoration benefits in the north Delta	Hazardous materials used during project construction could be inadvertently released. Ground-disturbing activities during project construction could disperse contaminated soil.
Freeport Regional Water Authority and Bureau of Reclamation	Freeport Regional Water Project	Project was completed late 2010	Project includes an intake/pumping plant near Freeport on the Sacramento River and a conveyance structure to transport water through Sacramento County to the Folsom South Canal	Construction workers and members of the public could be exposed to existing soil contamination during ground-disturbing activities such as excavation and grading. Because groundwater also could be contaminated in these areas, workers and residents could be exposed to contaminated groundwater during trench and tunnel dewatering. Potentially toxic substances such as fuels, oils, and lubricants would be used during project construction. Accidental releases of these substances could contaminate soils and degrade the quality of surface water and groundwater, resulting in a public safety hazard.

Agency	Program/ Project	Status	Description of Program/Project	Effects related to Hazards and Hazardous Materials
Bureau of Reclamation	Delta-Mendota Canal/ California Aqueduct Intertie	Completed in 2012	The purpose of the intertie is to better coordinate water delivery operations between the California Aqueduct (state) and the Delta-Mendota Canal (federal) and to provide better pumping capacity for the Jones Pumping Plant. New project facilities include a pipeline and pumping plant	Fuel, oils, grease, solvents and other petroleum-based products could have been accidently released and contaminate soils and degrade surface water and groundwater quality. Accidental releases could have also pose risks to worker safety by exposing workers to hazardous materials. Additionally, work under the California-Oregon Transmission Project has the potential to induce currents and static charges. Construction activities could cause electric arcs that could electrocute workers and bystanders, cause fires, and ground out the circuit. This could lead to a temporary collapse of the electric grid in the western region. If this were to happen, death and injury could result both at the project site and throughout the area of power outage.
California Department of Fish and Wildlife, US Fish and Wildlife Service, Bureau of Reclamation, California Department of Water Resources, Suisun Resource Conservation District	Suisun Marsh Habitat Management, Preservation, and Restoration Plan (SMP)	Final EIS/EIR 2011	The SMP is intended to balance the benefits of tidal wetland restoration with other habitat uses in the Marsh by evaluating alternatives that provide a politically acceptable change in Marsh-wide land uses, such as salt marsh harvest mouse habitat, managed wetlands, public use, and upland habitat.	Fuel and lubricant fluids associated with construction equipment could expose construction workers and the environment to hazardous materials if materials are improperly handled. Additionally, the project area has a history of agricultural use and may have areas of previously unknown contamination related to the use or storage of agricultural compounds. Project construction or maintenance activities thus could encounter unknown contamination.

This analysis first examines whether the combined effects of the BDCP alternatives and other projects would be cumulatively significant. If so, the BDCP alternatives are analyzed to assess whether the incremental contribution of a BDCP alternative would be cumulatively considerable in and of itself. Individual impacts that may be less than significant in isolation may contribute to a considerable impact in the context of other projects; on the other hand, the incremental contribution of a BDCP alternative to a cumulatively considerable impact of multiple projects may not itself be cumulatively considerable. Appendix 3D, *Defining Existing Conditions, the No Action/No Project, and Cumulative Impact Conditions*, further explains criteria for cumulative impact analysis.

The potential for cumulatively considerable impacts related to hazards and hazardous materials in the study area is described below for construction-related effects and effects related to operation

and maintenance for CM1 (water conveyance facilities), CM2–CM16, CM18, and CM19. As described in Section 24.3, four proposed conservation measures related to reducing other stressors (listed below and described in detail in Chapter 3, *Description of the Alternatives*), are not anticipated to result in any meaningful effects associated with hazards and hazardous materials in the study area. The actions implemented under these conservation measures do not entail physical activities that are likely to release hazardous materials to the environment, nor would they be expected to result in any direct or indirect, permanent or substantial impacts creating hazards to the public or environment. As such, these measures will not be addressed further in this cumulative impact analysis:

- Illegal Harvest Reduction (CM17)
- Recreational Users Invasive Species Program (CM20)
- Nonproject Diversion (CM21)
- Avoidance and Minimization Measures (CM22)

No Action Alternative

NEPA Effects: The cumulative effect of the No Action Alternative with regards to hazards and hazardous materials under the No Action Alternative would result from any projects that are planned or currently under way that entail construction and operation and maintenance activities. These activities could result in the rerelease of existing contaminants (e.g., from past industrial and agricultural practices) in soil and groundwater; the release of hazardous materials from disturbance of regional fuel pipelines; the accidental release of hazardous materials directly related to construction or operations/maintenance; increase the potential for wildland fire hazards; and/or interfere with air traffic safety, which could potentially result in cumulative effects on the public and environment.

Each project implemented under the No Action Alternative would require its own separate environmental compliance process. Compliance with applicable laws pertaining to hazards and hazardous materials, combined with the implementation of project-specific environmental commitments and mitigation measures, would minimize the potential cumulative impacts of the No Action Alternative related to hazards and hazardous materials. Therefore, there would be no cumulative adverse effect under this alternative absent a catastrophic event related to climate change or a seismic event.

The Delta and vicinity are within a highly active seismic area, with a generally high potential for major future earthquake events along nearby and/or regional faults, and with the probability for such events increasing over time. Based on the location, extent and non-engineered nature of many existing levee structures in the Delta area, the potential for significant damage to, or failure of, these structures during a major local seismic event is generally moderate to high. In the instance of a large seismic event, levees constructed on liquefiable foundations are expected to experience large deformations (in excess of 10 feet) under a moderate to large earthquake in the region. (See Appendix 3E, *Potential Seismic and Climate Change Risks to SWP/CVP Water Supplies* for more detailed discussion) To reclaim land or rebuild levees after a catastrophic event due to climate change or a seismic event would potentially create a substantial hazard to the public or the environment through the release of hazardous materials or by other means during construction. In the instance of levee failure causing flooding, inundation could result in the release of a range of hazardous materials including, but not limited to, fuel, chemicals, fertilizers, and pesticides. A large

scale seismic event could also rupture gas and oil pipelines resulting in exposure to hazardous materials. Thus, there would be a potential for adverse effects to the environment and public in the case of a catastrophic event due to climate change or a seismic event. While similar risks would occur under implementation of the action alternatives, these risks may be reduced by BDCP-related levee improvements along with those projects identified in Table 24-7.

***CEQA Conclusion*:** Implementation of programs, policies, and projects under the No Action Alternative in the study area would have the potential for cumulative significant impacts on the public or the environment related to hazards and/or hazardous materials (e.g., through the inadvertent release of fuels or lubricants during construction). However, these impacts would be smaller in scale and more confined in geographic scope relative to the BDCP action alternatives. Projects implemented under the No Action Alternative would require their own separate environmental compliance processes; would be required to adhere to applicable federal, state, and local regulations; and would incorporate applicable BMPs, environmental commitments, and/or mitigation intended to avoid, prevent, or minimize hazardous spills and construction-related hazards and/or mitigate for such occurrences, which would help ensure that these types of impacts are not cumulatively significant.

Impact HAZ-9: Create Cumulative Hazards to the Public or the Environment through the Release of Hazardous Materials or by Other Means as a Result of Constructing the Water Conveyance Facilities

Alternatives 1A–9

NEPA Effects: Construction of the water conveyance facilities under Alternatives 1A–9, in combination with other related past, present, and reasonably foreseeable probable future construction projects in the study area (as presented in Table 24-7 and Appendix 3D, *Defining Existing Conditions, the No Action/No Project Alternative, and Cumulative Impact Conditions*, Table 3D-6), could contribute to potential public and environmental hazards. The potential construction-related effects of these BDCP alternatives pertain to the creation of hazards through the release of hazardous materials (e.g., inadvertent spills and disrupting existing contaminants in soils and existing structures) or by other means (e.g., natural gas accumulation in tunnels, disturbance of energized transmission lines, interference with air traffic safety). It is reasonable to assume that other projects would involve the risk of similar hazards, given that the majority of these types of hazards (e.g., spills, potential for interference with air traffic for construction near an airport) are not uncommon for construction projects. The combined effects of the BDCP with other projects related to the potential for creation of cumulative hazards would be cumulatively adverse. However, like BDCP, each project would require an evaluation of potential hazards associated with its implementation. Additionally, it is the responsibility of the projects' proponents to comply with applicable laws regarding hazardous materials and other hazards.

Due to the large geographic scale and extended time required to construct the water conveyance facilities, the BDCP would make a cumulatively considerable contribution to adverse effects. However, implementation of environmental commitments (e.g., SWPPPs, HMMPs, SPCCPs, SAPs, and others as described above and in Appendix 3B, *Environmental Commitments*) and Mitigation Measures HAZ-1a, HAZ-1b, HAZ-6, HAZ-8, UT-6a, UT-6c, and TRANS-1a would render the contribution of the BDCP to less than cumulatively considerable. Accordingly, compliance with applicable laws pertaining to hazards and hazardous materials, combined with the implementation

of project-specific environmental commitments and mitigation measures, would minimize cumulative impacts of the BDCP and other projects related to hazards.

***CEQA Conclusion*:** The potential construction-related effects of these BDCP alternatives pertain to the creation of hazards through the release of hazardous materials (e.g., inadvertent spills, disrupting existing contaminants in soils) or by other means (e.g., natural gas accumulation in tunnels, disturbance of energized transmission lines, and interference with air traffic safety). Construction of the water conveyance facilities in combination with related past, present, and reasonably foreseeable probable future construction projects considered in this cumulative analysis (as presented in Table 24-7 and Appendix 3D, *Defining Existing Conditions, the No Action/No Project Alternative, and Cumulative Impact Conditions*, Table 3D-6) could result in a cumulatively significant impact related to hazards and hazardous materials. The incremental hazards and hazardous material impact contribution from any of the BDCP Alternatives 1A through 9 would be cumulatively considerable, but with the implementation of Mitigation Measures HAZ-1a, HAZ-1b, HAZ-6 UT-6a, UT-6c, TRANS-1a, and the applicable environmental commitments discussed previously and in Appendix 3B, *Environmental Commitments*, cumulative impacts of the BDCP would be reduced to a less-than-significant level.

Mitigation Measure HAZ-1a: Perform Preconstruction Surveys, Including Soil and Groundwater Testing, at Known or Suspected Contaminated Areas within the Construction Footprint, and Remediate and/or Contain Contamination

Please see Mitigation Measure HAZ-1a under Impact HAZ-1 in the discussion of Alternative 1A.

Mitigation Measure HAZ-1b: Perform Pre-Demolition Surveys for Structures to Be Demolished within the Construction Footprint, Characterize Hazardous Materials and Dispose of Them in Accordance with Applicable Regulations

Please see Mitigation Measure HAZ-1b under Impact HAZ-1 in the discussion of Alternative 1A.

Mitigation Measure HAZ-6: Test Dewatered Solids from Solids Lagoons Prior to Reuse and/or Disposal

Please see Mitigation Measure HAZ-6 under Impact HAZ-6 in the discussion of Alternative 1A.

Mitigation Measure UT-6a: Verify Locations of Utility Infrastructure

Please see Mitigation Measure UT-6a under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure UT-6c: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Worker and Public Health and Safety

Please see Mitigation Measure UT-6c under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management Plan

Please see Mitigation Measure TRANS-1a under Impact TRANS-1 in the discussion of Alternative 1A in Chapter 19, *Transportation*.

Impact HAZ-10: Create Cumulative Hazards to the Public or the Environment through the Release of Hazardous Materials or by Other Means as a Result of Operating and Maintaining the Water Conveyance Facilities

Alternatives 1A–9

NEPA Effects: Operation and maintenance of the water conveyance facilities under Alternatives 1A–9, in combination with other related past, present, and reasonably foreseeable probable future projects in the study area (as presented in Table 24-7 and Appendix 3D, *Defining Existing Conditions, the No Action/No Project Alternative, and Cumulative Impact Conditions*, Table 3D-6), could contribute to potential public and environmental hazards. As previously described, under all of the action alternatives, the transport, storage, and use of chemicals or hazardous materials may be required during long-term operation and maintenance of the water conveyance facilities. Additionally, for Alternatives 1A–8, facility equipment maintenance would be required for the intake pumping plants; sedimentation basins and solids lagoons; the intermediate forebay and pumping plant; and operable barrier, Byron Tract Forebay, and the expanded Clifton Court Forebay where present. For example, under alternatives with five intakes, maintenance of solids lagoons would create an anticipated 18,000 cubic yards of dry sediment/solids annually, a potential source of contaminants. Alternative 9 would require periodic dredging activities associated with maintenance of pumping plants and operable barriers. Some of the materials used in routine maintenance for all action alternatives may include hydraulic oil for lubricating machinery, fuel, batteries for vehicles and equipment, nitrogen, carbon dioxide or clear agent fire suppression, paints, cleaning solvents and chemicals, pesticides and herbicides for grounds maintenance. Some of these materials, bulk fuel and lubricants for example, would likely be stored in the maintenance facilities. Accidental release of hazardous materials during routine operation and maintenance of the water conveyance facilities could contaminate soils, groundwater, or surface water and result in adverse effects on the environment and public.

It is reasonable to assume that many other past, present, and reasonably foreseeable projects in the study area (e.g., California Aquatic Invasive Species Draft Rapid Response Plan; the Davis-Woodland Water Supply Project) would involve the risk of similar hazards, given that the majority of these types of hazards (e.g., spills, periodic dredging) are not uncommon for operating and maintaining water conveyance facilities.

The combined effects of the BDCP with other projects related to the potential for creation of cumulative hazards during operation and maintenance would be cumulatively adverse. Due to the large geographic scale of the water conveyance facilities, the BDCP would represent a cumulatively considerable contribution to adverse effects. However, implementation of Mitigation Measure HAZ-6 and applicable environmental commitments (as described in Impact HAZ-6 under Alternative 1A, and in Appendix 3B, *Environmental Commitments*), and adherence to all applicable laws, would reduce the contribution of the BDCP to less than cumulatively considerable. Accordingly, compliance with applicable laws pertaining to hazards and hazardous materials, combined with the implementation of project-specific environmental commitments and mitigation measures, would minimize the cumulative impacts of the BDCP and other projects related to hazards.

***CEQA Conclusion*:** The accidental release of hazardous materials to the environment during operation and maintenance of the water conveyance facilities under all action alternatives could result in cumulative significant impacts on the public and the environment. The incremental contribution to hazards and hazardous material impact from any of the BDCP Alternatives 1A

through 9 would be cumulatively considerable. However, these impacts would be reduced with the implementation of Mitigation Measure HAZ-6 and applicable environmental commitments (as described in Impact HAZ-6 under Alternative 1A, and in Appendix 3B, *Environmental Commitments*, respectively) and adherence to all applicable laws. Accordingly, cumulative impacts of the BDCP would be reduced to a less-than-significant level.

Mitigation Measure HAZ-6: Test Dewatered Solids from Solids Lagoons Prior to Reuse and/or Disposal

Please see Mitigation Measure HAZ-6 under Impact HAZ-6 in the discussion of Alternative 1A.

Impact HAZ-11: Create a Cumulative Hazard to the Public or the Environment through the Release of Hazardous Materials or by Other Means as a Result of Implementing the Conservation Measures

Alternatives 1A–9

NEPA Effects: Construction, operation and maintenance of the proposed conservation measures CM2–CM11, CM13, CM14, CM16, and CM18 as part of Alternatives 1A–9 could have effects related to hazardous materials (e.g., accidental release of fuels) and potential hazards similar to those discussed for construction, operation, and maintenance of proposed water conveyance facilities. As previously described, implementation of the conservation measures would involve extensive use of heavy equipment during construction, and/or the use of chemicals during operations and maintenance (e.g., herbicides for nonnative vegetation control), which could result in the unintentional release of hazardous substances and could expose construction workers or the public to hazards. There is also potential for implementation of conservation measures that create or improve wildlife habitat (CM2–CM11) to create hazards to air and public safety through increased bird-aircraft strikes. The following airports, because they are in relatively close proximity (within 2 miles) to the ROAs and/or conservation zones could potentially be affected: Travis Air Force Base; Rio Vista Municipal Airport; Funny Farm Airport; Sacramento International Airport, and Byron Airport. Mitigation Measure HAZ-8 is available to reduce this impact, although it would remain significant and unavoidable. However, relative to the construction of the water conveyance facility, the potential effects of BDCP conservation measures would be dispersed over a larger geographic area and would generally involve substantially fewer construction and operation effects than those associated with built facilities.

It is reasonable to assume that other past, present and reasonably foreseeable future projects, including habitat restoration and enhancement projects (e.g., the Dutch Slough Tidal Marsh Restoration Project, and the San Joaquin River Restoration Project), as identified in Table 24-7 and Appendix 3D, *Defining Existing Conditions, the No Action/No Project Alternative, and Cumulative Impact Conditions*, Table 3D-6, would have similar, potentially hazardous effects. Combined effects of the BDCP and other projects would be cumulatively adverse. Due to the large geographic scale and range of hazard risks involved in BDCP conservation measures, its incremental contribution to adverse effects would be cumulatively considerable.

However, the proposed BDCP alternatives incorporate environmental commitments and Mitigation Measures HAZ-1a, HAZ-1b, HAZ-8, UT-6a, UT-6c, and TRANS-1a, as described under Impact HAZ-7 for Alternative 1A and in Appendix 3B, *Environmental Commitments* that would reduce BDCP's incremental contribution to adverse cumulative effects in the study area. Similarly, it is reasonable to assume that BMPs like the ones described previously (e.g., SWPPPs, SPCCPs, SAPs, and HMMPs) to

minimize, avoid, and reduce effects related to hazards and hazardous materials would be incorporated into other projects within the study area, thereby further reducing the potential for cumulative effects related to hazards and hazardous materials in the study area.

***CEQA Conclusion*:** The potential for cumulative impacts related to the release and exposure of workers and the public to hazardous substances or conditions during construction, operation, and maintenance of BDCP conservation measures is considered cumulatively significant. Implementation of the conservation measures would involve extensive use of heavy equipment and/or the use of chemicals during operations and maintenance (e.g., herbicides for nonnative vegetation control) that could unintentionally result in the release of hazardous substances or that could expose construction workers or members of the public to hazards. Expanded or improved wildlife habitat could increase the risk of bird-aircraft strikes, a hazard to air and public safety. However, the BDCP proponents have incorporated environmental commitments and would implement Mitigation Measures HAZ-1a, HAZ-1b, HAZ-8, UT-6a, UT-6c, and TRANS-1a, which would reduce the incremental contribution of the BDCP to cumulative hazard-related impacts in the study area to a less-than-significant level.

Mitigation Measure HAZ-1a: Perform Preconstruction Surveys, Including Soil and Groundwater Testing, at Known or Suspected Contaminated Areas within the Construction Footprint, and Remediate and/or Contain Contamination

Please refer to Mitigation Measure HAZ-1a under Impact HAZ-1 in the discussion of Alternative 1A.

Mitigation Measure HAZ-1b: Perform Pre-Demolition Surveys for Structures to Be Demolished within the Construction Footprint, Characterize Hazardous Materials and Dispose of Them in Accordance with Applicable Regulations

Please refer to Mitigation Measure HAZ-1b under Impact HAZ-1 in the discussion of Alternative 1A.

Mitigation Measure HAZ-8: Consult with Individual Airports and USFWS, and Relevant Regulatory Agencies

Please see Mitigation Measure HAZ-8 under Impact HAZ-8 in the discussion of Alternative 1A.

Mitigation Measure UT-6a: Verify Locations of Utility Infrastructure

Please see Mitigation Measure UT-6a under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure UT-6c: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Worker and Public Health and Safety

Please see Mitigation Measure UT-6c under Impact UT-6 in the discussion of Alternative 1A in Chapter 20, *Public Services and Utilities*.

Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management Plan

Please see Mitigation Measure TRANS-1a under Impact TRANS-1 in the discussion of Alternative 1A in Chapter 19, *Transportation*.

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